ENGLISH

OPTIMA RT9 6KVA / 10KVA

USER MANUAL

DOUBLE CONVERSION UPS
RACK / TOWER UPS

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1. GENERAL SAFETY INSTRUCTIONS .

WARNING: It is required to read and understand this manual. Follow all instructions given in this manual for starting up and operating this product. Only qualified technician must start-up, operate and maintain this product. Keep manuals as a guide for future consults.

WARNING: This product operates with dangerous voltages. It must be installed, operated and maintained ONLY by qualified technicians trained for this kind of products. Service personnel MUST know and understand very well all electric risks related to this product. UPS manufacturer or distributor will never be responsible for any accident produced by lack of knowledge or negligent practices at the moment of install, starting up or maintain this product.
UPS manufacturer or distributor is not liable for any damage that might rise from misusing this unit or defective installation.

WARNING: If you are not qualified technician do not try to install, operate or repair this product.

WARNING: Do not try to install, operate or repair this product if you are not accompanied by another qualified person able to offer first aid support in case of emergency or accidents.

WARNING: Internal area of this product is locked by screws. Do not try to access inside the UPS unless you are a qualified technician. UPS must be checked, repaired and maintained by qualified personnel only.

CAUTION!!: ELECTRIC SHOCK RISK

CAUTION: There are dangerous voltages in the UPS power outlets although the equipment is not plugged to power line.

CAUTION: Inside this equipment, due to internal batteries, there are ALWAYS dangerous voltages, thought the UPS is OFF and unplugged of power line.

CAUTION: There are dangerous voltages in DC (Direct Current) Capacitors. Please Check Capacitor location in Figure 8.4.1. Wait at least 10 minutes after turning off UPS before opening it to access inside.

DANGER: Power off UPS and unplugged it from AC Line before opening it to Access inside this unit.

CAUTION: Before starting the opening procedure, remove all jewelry and metallic objects such as: Rings, Watches, Bracelets, etc., because they could contact conductive parts and components inside the UPS and this might cause discharges and/or short circuits. Make sure using tools properly isolated to avoid electrical risks.

Transportation and Storage: Warnings and Recommendations

WARNING: This UPS must be transported only in its original package to be properly protected

WARNING: This equipment must be storage in dry and ventilated site, in upright position.

WARNING: Before storage this UPS, batteries must be recharged for 8 to 10 hours

WARNING: During long term storage UPS must be recharged periodically according to this manual.

WARNING: EQUIPMENT DISPOSAL

Out of service units: It is strongly recommended to dispose this piece of equipment according to valid directives in your country. At the moment of disposing all pieces need to be managed appropriately to avoid possible environmental damage or for some materials to be recycled.
Batteries: Do not throw it to fire (risk of explosion). Do not open the batteries, there are dangerous liquids inside

WARNING: BATTERIES MAINTENANCE

- Batteries capacity, in general (of all kinds), decrease with time and use.
- Our products contain high quality batteries only.
- Batteries useful life in our UPS is between 4 and 5 years, considering environment temperature under 25 ºC and optimal operational conditions. This time can be dramatically reduced by high temperature and other adverse operation condition.
- Batteries life expectancy may be also affected by other operation conditions such as electrical service quality as well as number and kind of equipments connected to UPS
- Batteries should be periodically tested to check capacity and assure and appropriate back up.

- To enlarge batteries life expectancy it is recommendable to fully discharge UPS one every 2 to 3 months
- During UPS storage recharge batteries according to the following table:

Storage Temperature	Recharging Frequency	Recharging Time
-25°C a +30°C	Every 4 months	During 6 hours
+30°C a +45°C	Every 2 months	During 6 hours

SAFETY STANDARDS

SAFETY:	IEC/EN 62040-1
EMI (Radiated):	IEC/EN 62040-2 (Cat 3)
EMI (Conducted):	IEC/EN 62040-2 (Cat 3)
EMS Power-Frequency Magnetic Field:	IEC/EN 61000-4-8 (Level 4)
EMS Low Freq. Signals:	IEC/EN 61000-2-2
EMS (ESD):	IEC/EN 61000-4-2 (Level 4)
EMS (RS):	IEC/EN 61000-4-3 (Level 3)
EMS (EFT):	IEC/EN 61000-4-4 (Level 4)
EMS (SURGE):	IEC/EN 61000-4-5 (Level 4)
EMS (CS):	IEC/EN 61000-4-6 (Level 3)

This product has been designed to operate in industrial and commercial applications. If it is used in different application some considerations for avoiding interferences could be necessary.

2. AVAILABLE MODELS

- OPTIMA RT9 6K / 10K:

UPS including UPS Module and Batteries Module with DC connector for additional external batteries
Rack-Tower mounting
Input / Output: 1Ph 208/220/230/240Vac.
Components:

- 1 module (3U) with UPS electronic set.
- 1 module (3U) with UPS batteries.

- OPTIMA RT9 ISOTX (Optional Accessory)

ISOTX (isolation transformer) module for offering an isolated dual output (120Vac x 2) for RT9 6K/10K UPS
Input: 1Ph 220Vac coming from UPS output
Output: 2 isolated 120Vac outputs.
Components:

- 1 module (3U) with ISOTX

- EXBATT RT10 - EXTERNAL BATTERIES (OPTIONAL MODULE)

This UPS can operate with the batteries module included with the UPS however if additional runtime is required additional external batteries modules (EXBATT) can be connected to the UPS. NO additional accessories are necessary to make connection to additional EXBATTmodules.

Módulo de Baterías Externas:
Model: EXBATT-OPT-RT10
Batteries: 20 pieces:1 group of 12V-9AH
DC Voltage: 240Vdc

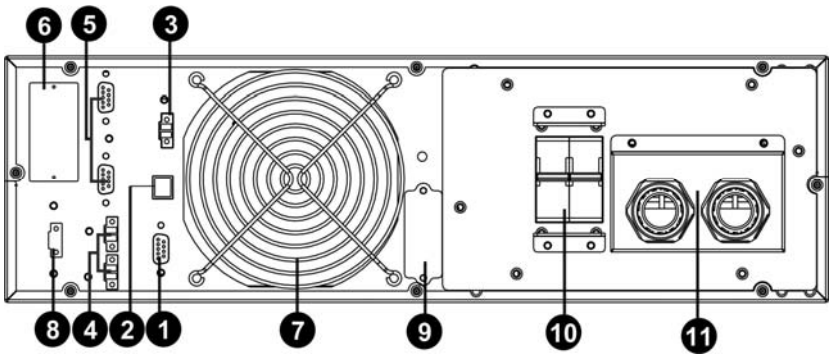
MODEL	BATTERY MODULE	CONNECTION TO EXBATT	ISOTX
OPT RT9 6K	Y	Y	Optional
OPT RT9 10K	Y	Y	Optional

Note: ISOTX is an optional accessory module (3U height)

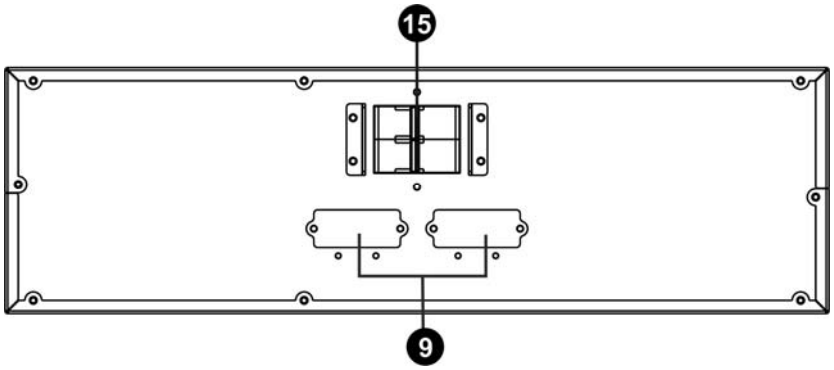
RACK: RACK 6KEX / 10KEX

UPS MODULE	BATTERY MODULE
1. RS-232 2. USB 3. EPO" (Emergency Power Off): Open = Power Output OFF / Close = Function disable 4. Share Current Port (for parallel function) 5. Parallel Port (for parallel function) 6. SNMP Intelligent Slot 7. Cooling Fans 8. External Bypass Switch port (MBS port) 9. DC connector for EXBATT 10. Main AC Input Breaker 11. Terminal Block Cover	9. DC Connectors 15. Input DC Breaker **ISOTX MODULE** 16. Output terminal block cover 17. AC Input (from UPS output)

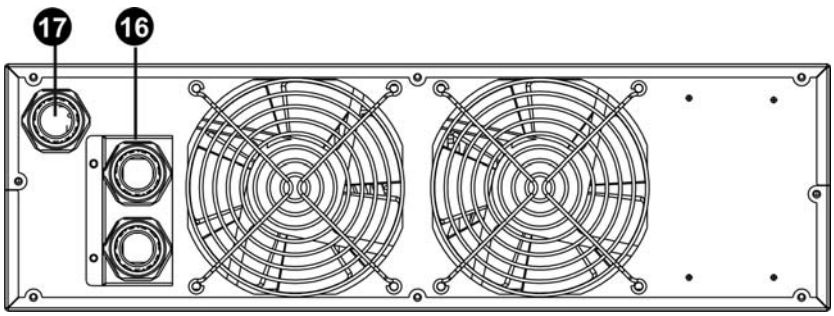
UPS MODULE:



BATTERY MODULE:



ISOTX MODULE:



3.- UPS INSTALLATION: SITE PLANING

SAFETY INSTRUCTIONS

WARNING: Before revising this section you must read and understand very well section 1 of this manual: "GENERAL SAFETY INSTRUCTIONS".

WARNINGS, RECOMMENDATIONS AND LIABILITY LIMITATION

REACH AND LIABILITY LIMITATION: The preparation of the site, wiring and all protection devices must be supplied by end user and it will not be responsibility neither the UPS distributor nor the UPS technician in charge of the start-up.

The place will be conditioned be end user or electrical contractor and must fulfill with local normative and directives and UPS technical requirements.

This manual describes minimal conditions and technical requirements with which the site must accomplish.
Directives and requirements described in this manual, do not pretend to substitute in any way local electrical directives or normative.
In some cases, local directives or regulations might be more exigent than UPS technical requirements described by this manual. In that case end user electrical contractor must be sure to comply with all related local electrical regulations and directives.

WARNING: Power lines must be protected by protection devices against over current (breakers) or leak currents with capacity and technology appropriate to effectively accomplish its function. Moreover, installation grounding must be correct.

WARNING: Install the UPS in well ventilated locations and leave room enough between UPS and close objects and structures

WARNING: Do not connect to UPS equipments or devices that exceed its capacity, this would overload the UPS.

WARNING: This product has been designed to be used indoors protected from water, direct sun light, dust and extreme temperature.

WARNING: Do not put any object on the UPS; do not apply any force over UPS. Do not cover UPS ventilation.

WARNING: This UPS must be connected to appropriate electrical service according to selected model. Technical specs sticker in the UPS shows the UPS power ratings. DO NOT connect this UPS to any of its own power outlets, this could damage the unit permanently.

WARNING: Connect only computer related equipments to this UPS. DO NOT connect medical equipments or critical availability equipments to this UPS. DO NOT connect AC motor based equipments. DO NOT connect home appliances (ovens, vacuum cleaners, refrigerators, etc.) to this UPS.

SITE INSPECTION AND INSTALLATION CONDITIONS

REGULATIONS AND LEGAL DIRECTIVES

It is necessary to check that installation site, wiring and power protection in the installation supplied by end user, fulfill technical parameters required by UPS.
A particular installation might accomplish with UPS requirements but not with local directives and regulations.
The end user and/or electrical contractor will be responsible of watching for complying with electrical regulations and normative during electrical installation managed by end user.
Inspection performed by installation technician is not intended to confirm regulations and directives accomplishing but only with technical needs for optimal UPS operation.

SITE INSPECTION

- During transport of this UPS from a cold place to a warmer and more humid one, some condensation could be generated. Leave the UPS for at least 2 hours to climate to new installation site.
- Do not install the UPS outdoors or near water sources nor in wet environment
- Do not install the UPS in sites exposed to sun light or heat sources. Temperature at operation site should never rise over 35 ºC. Batteries' life shortens over 25 ºC.
- Installation site must be dry, fresh, free of dust, fibers and any other objects (conductors or not) suspended in the air that could get into the UPS thru the ventilation system (Fan).
- Do not block UPS ventilations

UPS INPUT AND OUTPUT POWER LINES PROTECTION

AC LINES PROTECTIONS DEVICES:
All UPS Inputs and outputs must be protected by circuit breakers and current leak protections. Protection capacity and type must fulfill local regulations as well as directives from this manual. Grounding must be according to local directives as well.

DC PROTECTIONS DEVICES:
For Ex models (with external batteries) there must be also DC Circuit Breakers between UPS and battery bank.
Some Models include a DC breaker on the rear panel for external battery pack protection; otherwise an external DC Circuit breaker must be installed.

MATERIALS AND ELECTRICAL DEVICES

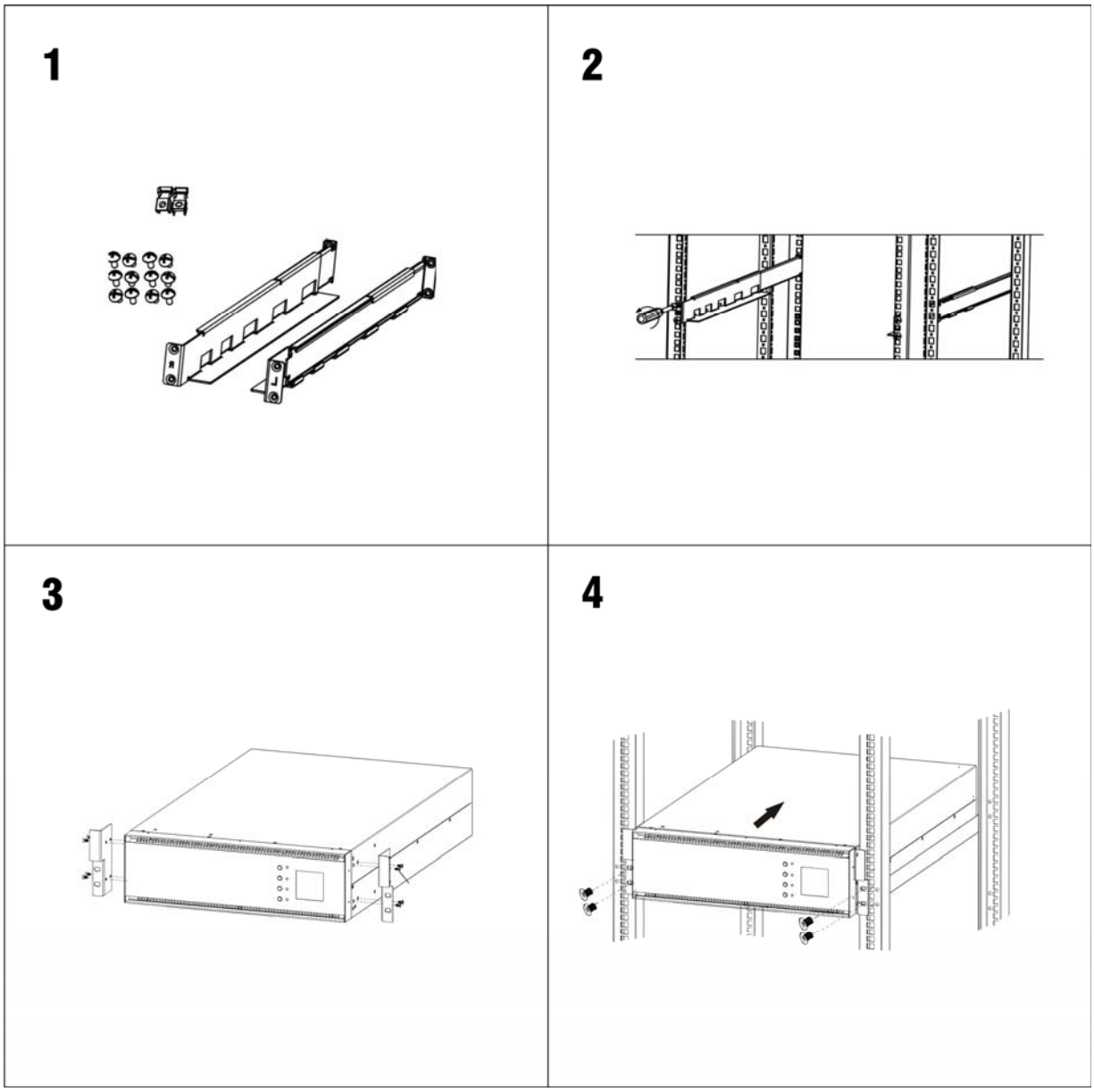
WARNING: Verify that all electrical lines involved in installation are open circuits and free of dangerous voltages before starting inspection tasks. All switches related to these electrical lines must be in **"OFF"** position before starting UPS installation. After disconnecting power from electrical lines involved in installation, check again with a digital voltmeter that are free of dangerous voltages.

IMPORTANT: Warning label must be placed on primary involved circuit breakers to alert there are maintenance personnel working on these circuits to avoid accidental actuation on involved breakers.

RACK UPS INSTALLATION

Rack UPS must be installed using L-Shape type guides for supporting UPS weight. Usually this kind of supports is provided with rack cabinets. If not, UPS distributor can provide original telescopic guides as optional accessory.
Small black handles included with the UPS are only for locking purposes. UPS cannot be supported only by these handles.

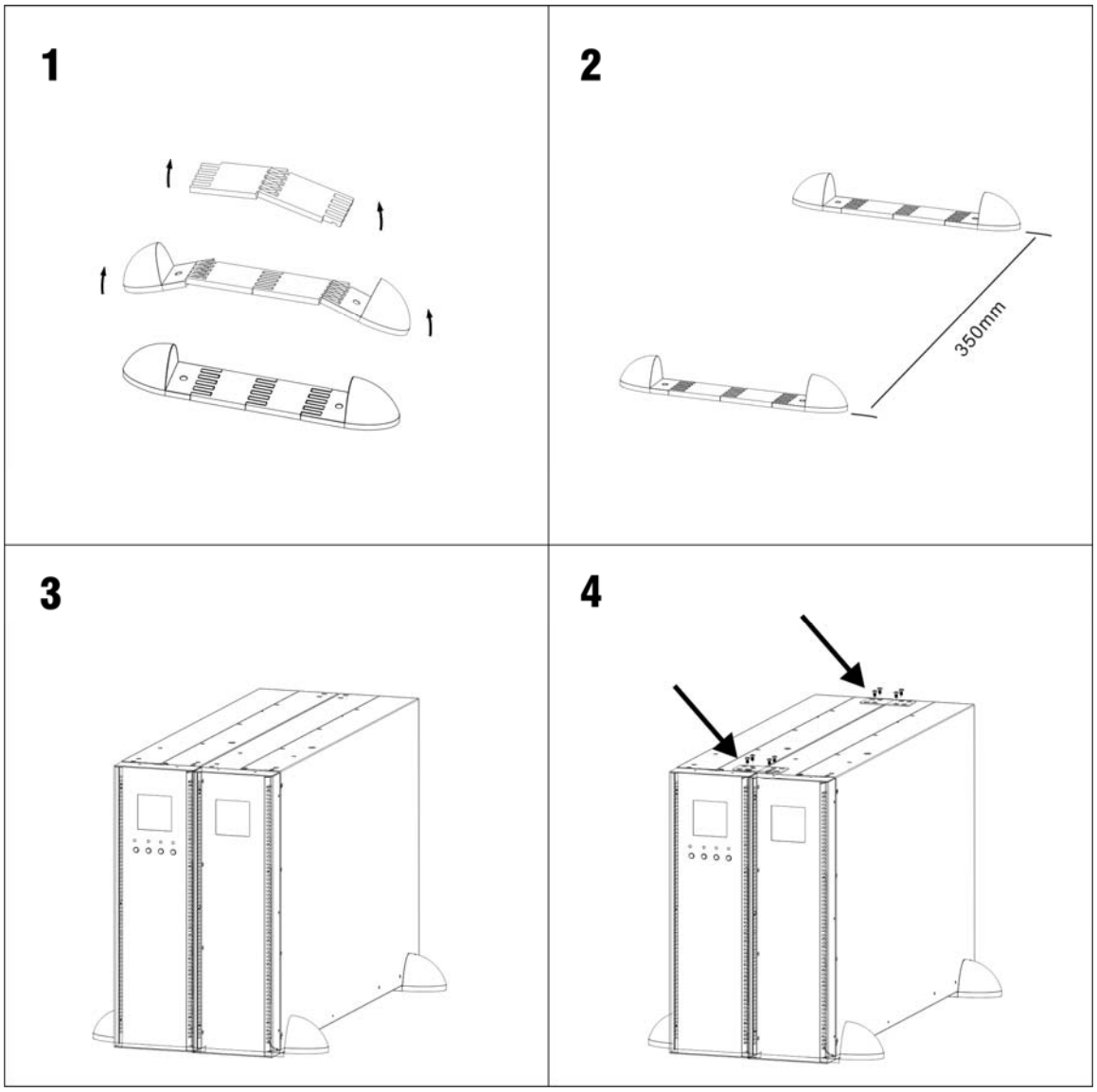
- Figure 1: Rack cabinet must include L-shape guide to support UPS.
- Figure 2: UPS must be installed on L-shape guides.
- Figure 3: Handles included with UPS are only for locking UPS to the cabinet but not for supporting UPS weight.
- Figure 4: Original telescopic guides can be provided as optional accessory if it is required.



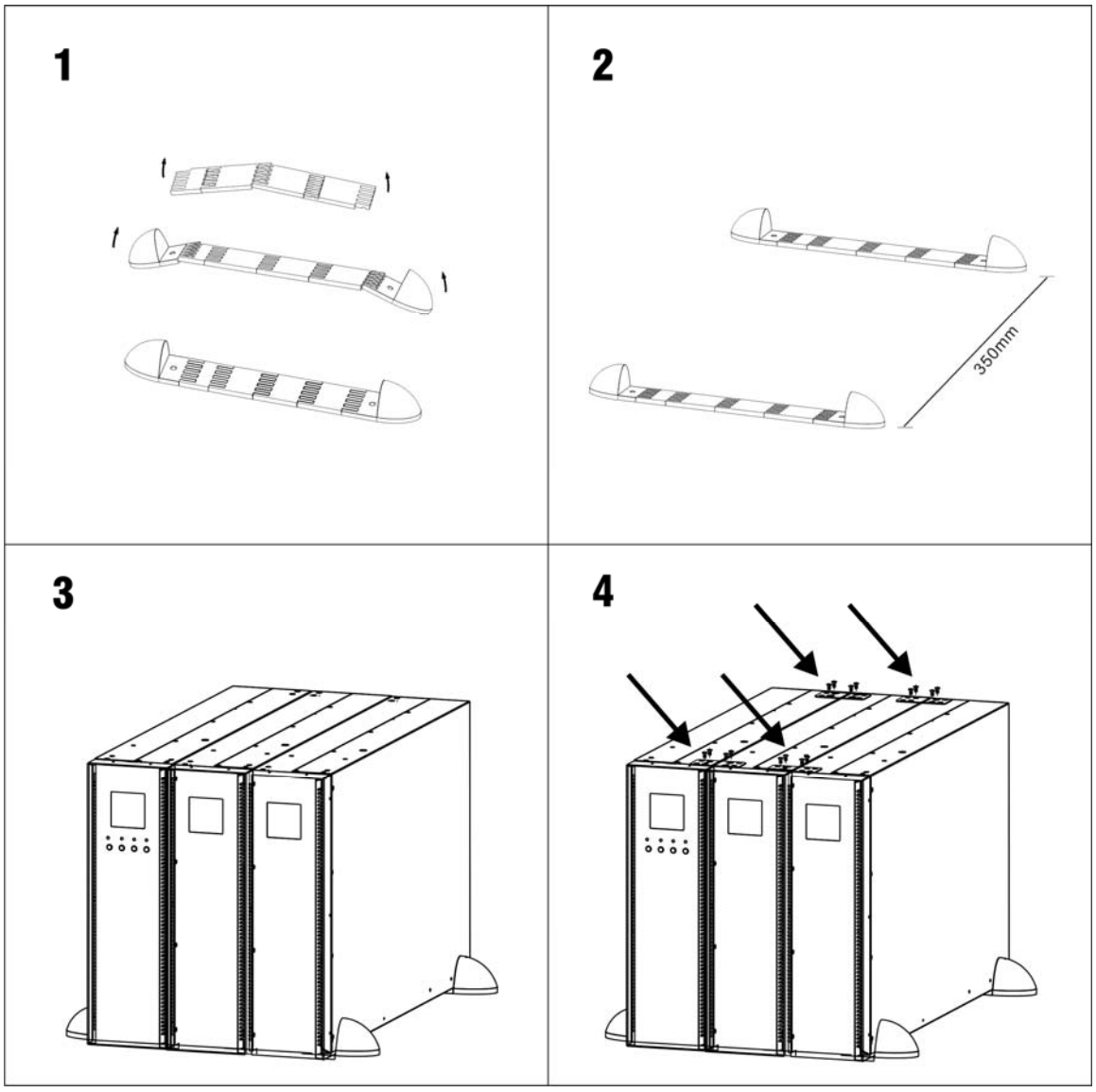
TOWER INSTALLATION

This UPS can be also installed as tower UPS as indicated below.

UPS + BATTERY MODULE = 2 MODULES



3 MODULES = UPS + BATTERY MODULE (EXBATT) + ISOTX



ELECTRICAL REQUIREMENTS (MANDATORY)

* All Power lines must be protected by magneto-thermal protection devices against over current (breakers) with capacity and technology appropriate to effectively accomplish its function as indicated in this manual. Moreover, installation grounding must be correct.
* This UPS must be connected to appropriate electrical service according to selected model. Technical specs sticker in the UPS shows the UPS power ratings. DO NOT connect this UPS to any of its own power outlets, this could damage the unit permanently.

LEAK CURRENT PROTECTION

In many countries, now a day, it is legally required to install protections against current leakage to protect human beings in cases of leaks o discharges to ground. It is responsibility of the end user and/or electrical contractor selecting and including these protection devices in the electrical circuit of the UPS.

CIRCUIT BREAKERS AND WIRING SELECTION

Breakers and Gauge of the wires used in the installation must be rated to drive current values in Amps as indicated in below tables. NOTE every country has its local electrical requirements and regulations. If local electrical regulations require higher rates than suggested values in this section, please follow local regulations.

RT9 UPS	INPUT 220Vac 1Ph	OUTPUT 220Vac 1Ph	EXT. BATT (240Vdc)
MODEL	BREAKER & WIRING	BREAKER & WIRING	BREAKER & WIRING
6KVA Salida 220Vac	**AC Breaker:** 40A (Curve D) **Max. Nominal Current:** 36A **Wiring (min. size):** 10AWG (6 mm2)	**AC Breaker:** 40A (Curve D) **Max. Nominal Current:** 36A **Wiring (min. size):** 10AWG (6 mm2)	**Breaker:** 50A DC (Curve C) **Max. Nominal Current:** 30A DC **Wiring (min. size):** 10 AWG (6 mm2)
10KVA Salida 220Vac	**AC Breaker:** 63A (Curve D) **Max. Nominal Current:** 60A **Wiring (min. size):** 8AWG (10 mm2)	**AC Breaker:** 63A (Curve D) **Max. Nominal Current:** 60A **Wiring (min. size):** 8AWG (10 mm2)	**Breaker:** 63A DC (Curve C) **Max. Nominal Current:** 50A DC **Wiring (min. size):** 8 AWG (10 mm2)

ISOTX	UNIQUE OUTPUT: 1 x 120Vac (100% Watts)	SEPARE OUTPUTS: 2 x 120Vac (50% Watts each)
6KVA + ISOTX Output 110/220V	**Unique Output Capacity:** 6.000VA / 5.400W **Output Voltage:** 120Vac **AC Breaker:** 80A (Curve D) **Max. Nominal Current:** 70A **Wiring (min. size):** 6AWG (16 mm2)	**VA/W per Output:** 3.000VA / 2.700W **Output Voltage:** 120Vac **AC Breaker:** 40A (Curve D) **Max. Nominal Current:** 36A **Wiring (min. size):** 10AWG (6 mm2)
10KVA + ISOTX Output 110/220V	**Unique Output Capacity:** 10.000VA / 9.000W **Output Voltage:** 120Vac **AC Breaker:** 125A (Curve D) **Max. Nominal Current:** 120A **Wiring (min. size):** 3AWG (35 mm2)	**VA/W per Output:** 5.000VA / 4.500W **Output Voltage:** 120Vac **AC Breaker:** 63A (Curve D) **Max. Nominal Current:** 60A **Wiring (min. size):** 8AWG (10 mm2)

Recommended cable size according to 1999 NEC based on 30ºC air ambient temperature for 4 copper cables in conduit.

WARNING: Above wire gauge values are only a recommendation.
The wire size is strongly affected by diverse factors such as: Operation temperature, wire length, type of wire and kind of installation. Electrical contractor must assure an appropriate selection for wire and protection devices sizing for complying with local regulations for electrical installations. Wiring colors must be selected according to local directives and regulations

ADVERTENCIA: ISOTX module offers 2 separate outputs 120Vac L-N each. When outputs are used separately, each output only can supply 50% of total UPS capacity. For example for 6KVA UPS, each separate output will supply 3KVA. You can have one 120Vac output with 100% capacity by connecting 2 separate outputs in parallel.

4.- UPS INSTALLATION: SINGLE UPS - TERMINAL BLOCK

AC LINES CONNECTION PROCEDURE

- **Make sure the UPS is Off before starting the installation.**
- **Remember to check all wires to be connected are not powered (including external batteries).**

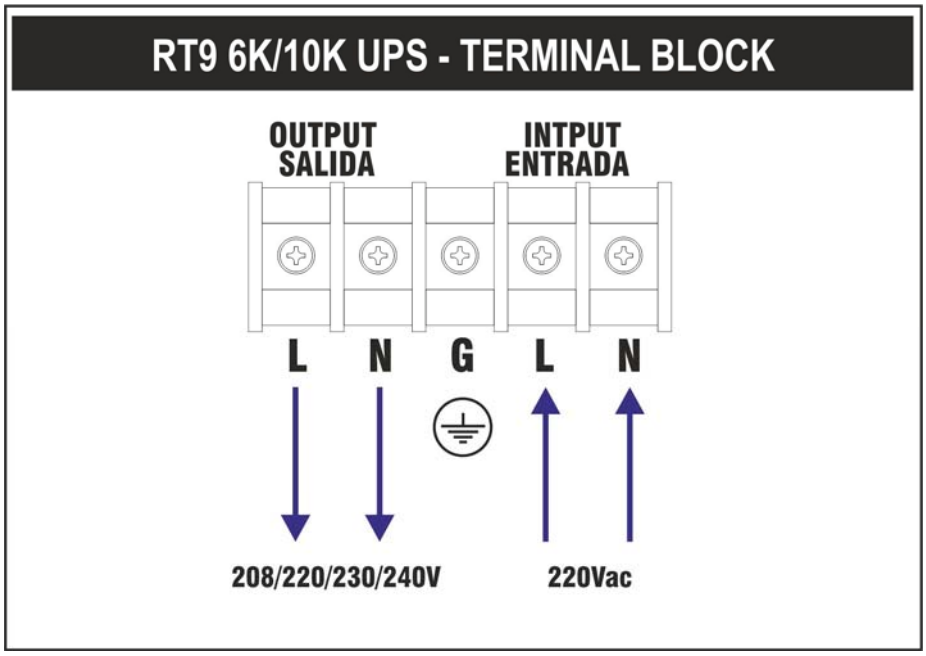
UPS terminal block preparation

Remove cover of terminal block at the UPS rear panel in rear panel section of this manual
DO NOT use a wall power outlet to plug UPS to AC Line as usually ratings of this kind of outlets are not enough to power 6KVA UPS.
UPS Input wire must be connected by breaker protected line to electric panel board.

UPS Input and Output Connection

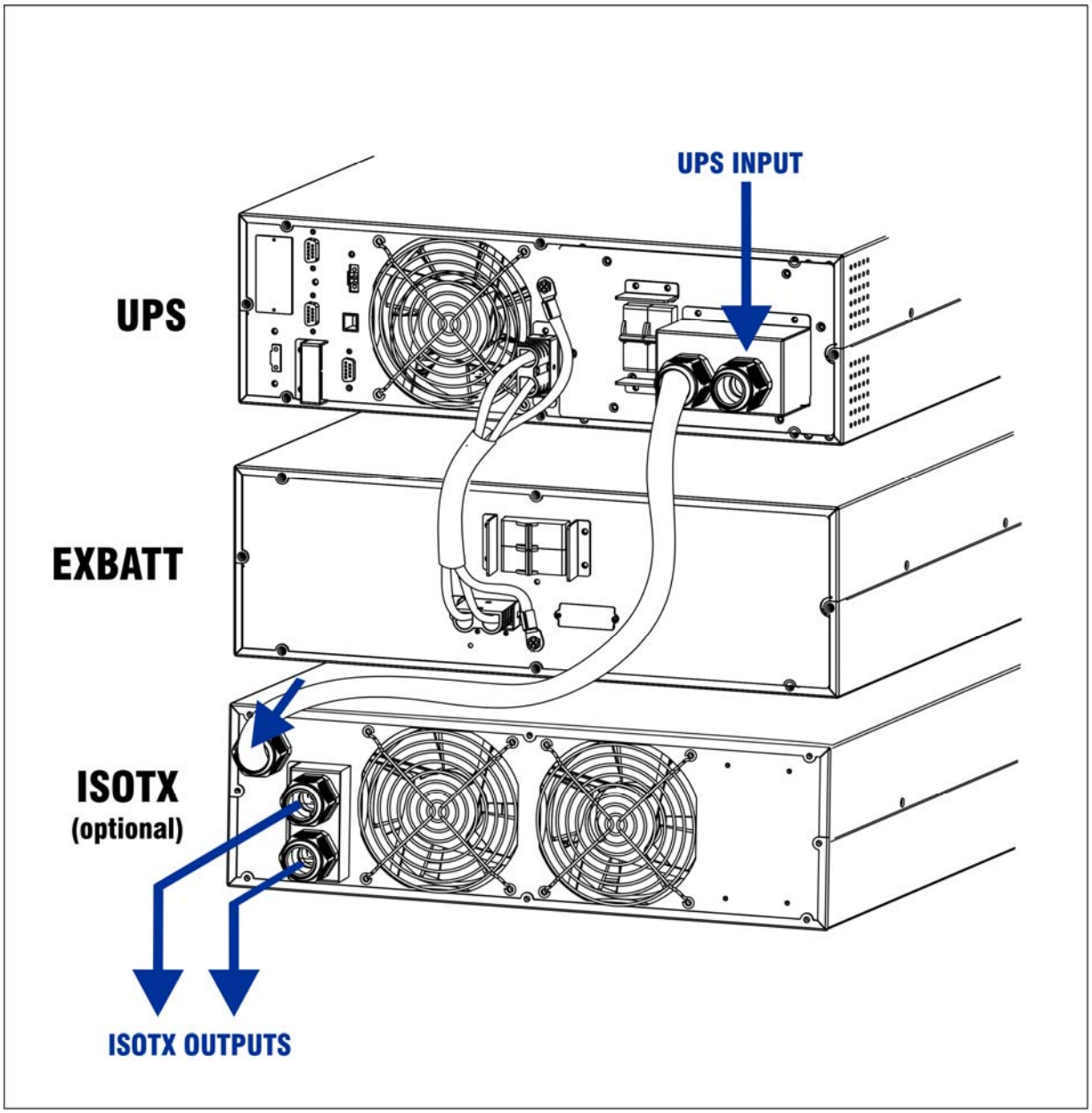
First, connect Ground wires. Ground wires must be FIRST to be connected and LAST to be disconnected.
Connect UPS input and output wires according to your UPS model or configuration as described in following figures:

RT9 6-10K TERMINAL BLOCK

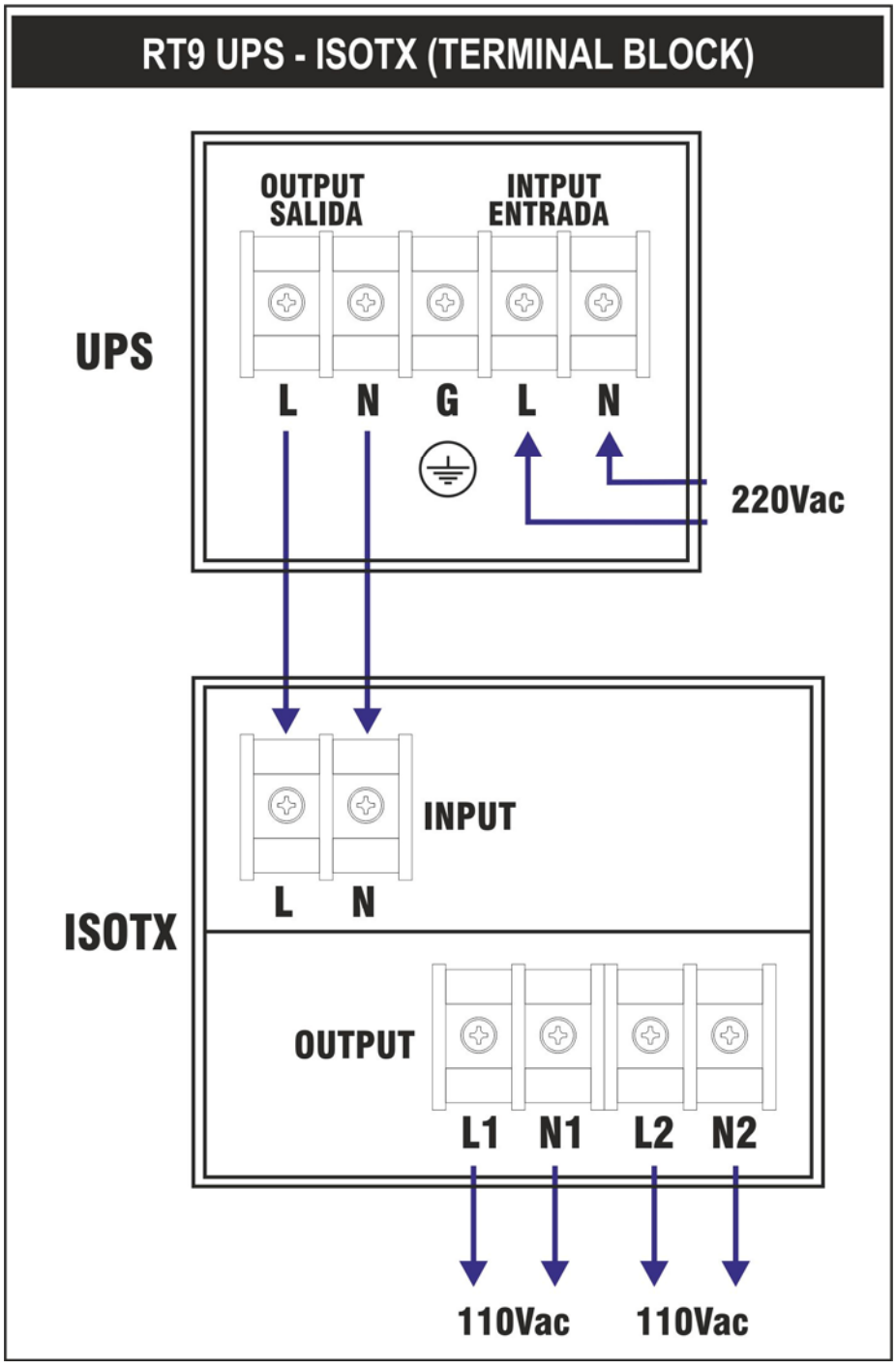


UPS TO ISOTX WIRING

ISOTX module is an optional accessory rack module that offers 2 isolated 120Vac outputs.
UPS AC output must be connected to ISOTX input as indicated.

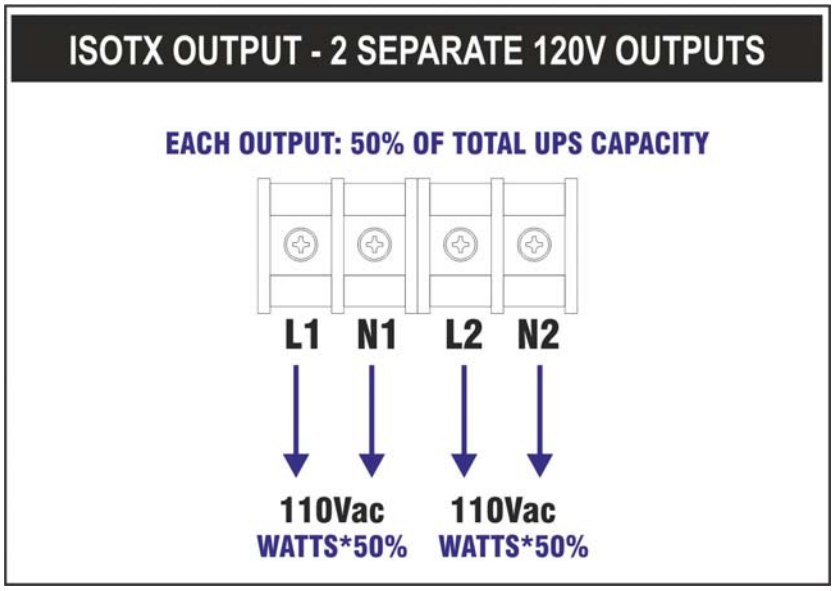


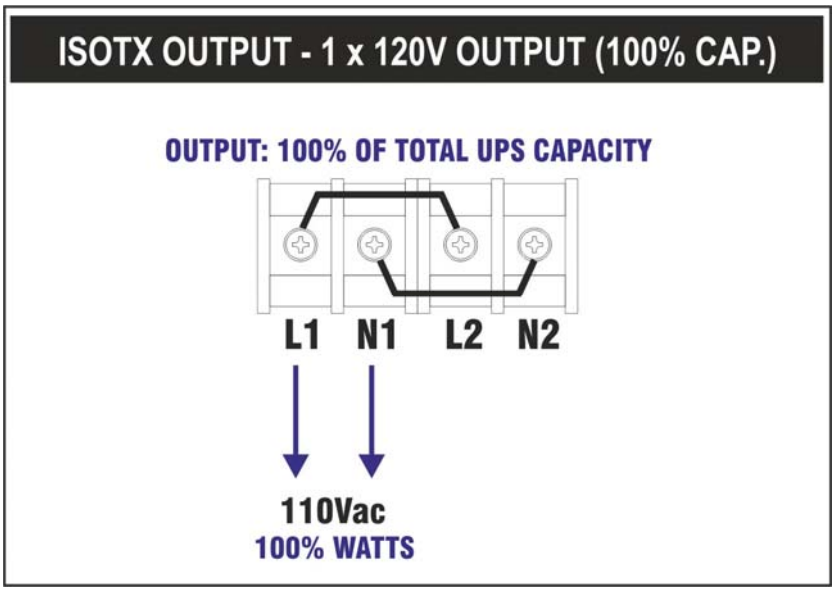
ISOTX TERMINAL BLOCK

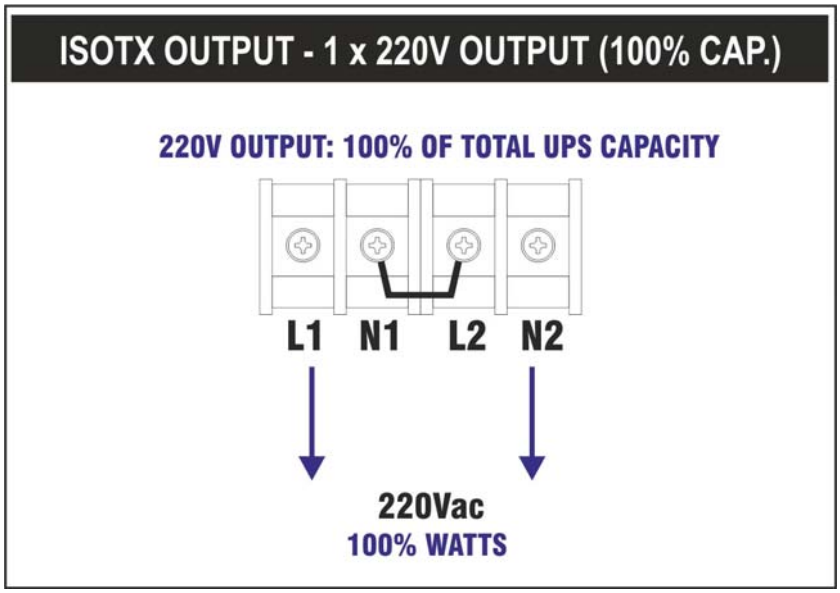


ISOTX OUTPUT CONFIGURATIONS

ISOTX outputs can be configured in 3 different manners as detailed in this section.

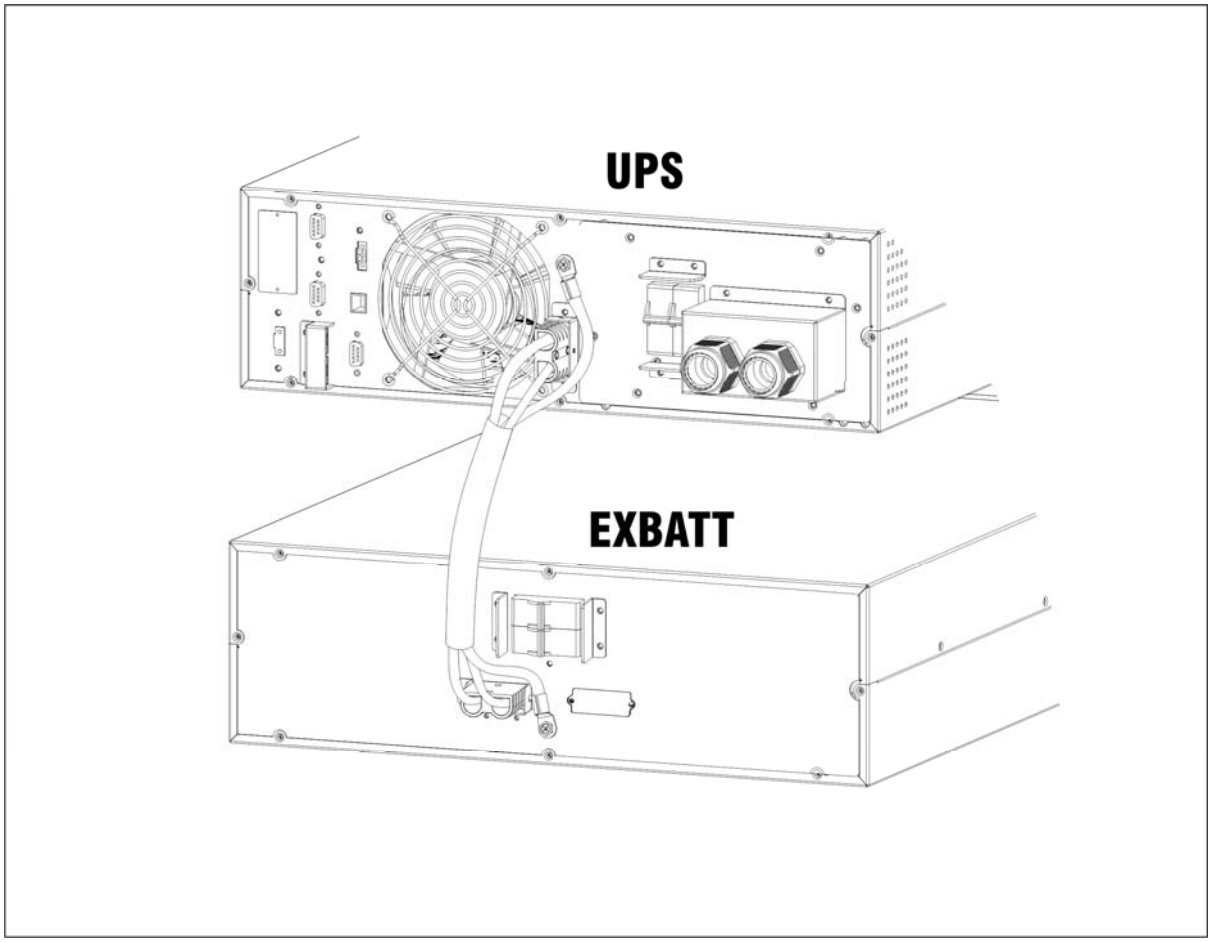


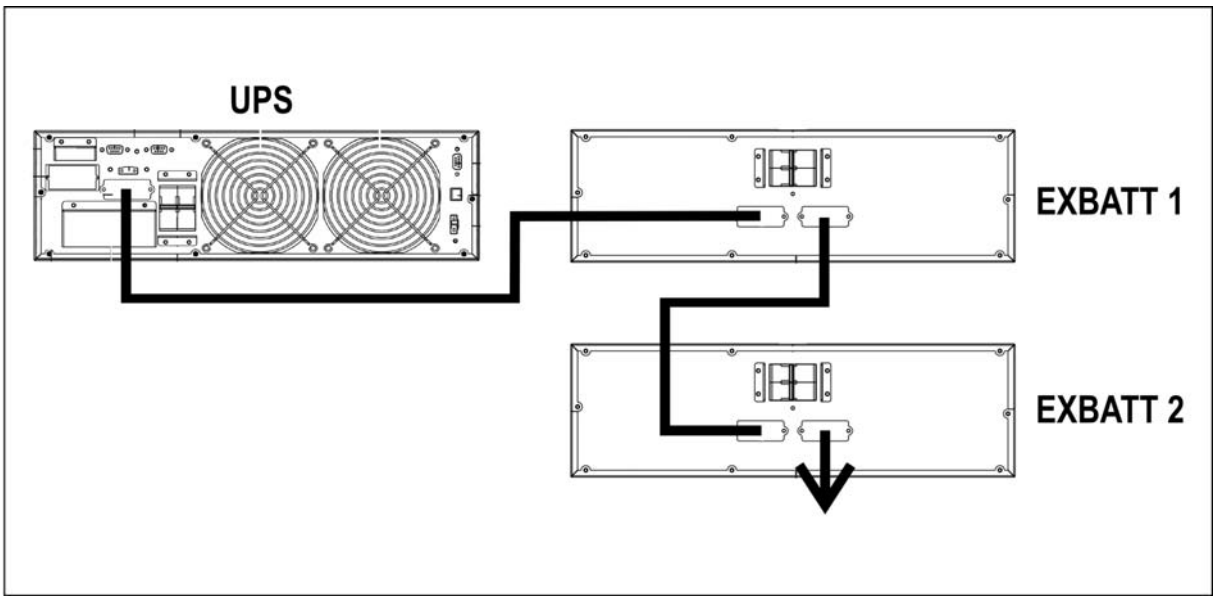




EXTERNAL BATTERY CABINETS – CONNECTION PROCEDURE

1.- Check all DC breakers are in OFF position
2.- Remove all DC connector covers in UPS and EXBATT cabinets
3.- Using appropriate cable (supplied with the EXBATT) connect UPS with EXBATT 1.
In case of more than 1 EXBATT connect EXBATT 1 with EXBATT 2 and so on until last EXBATT.
4.- Activate DC breakers one by one in EXBATT cabinets to connect EXBATT batteries with internal UPS Main batteries.





5.- UPS INSTALLATION: PARALLEL UPS - TERMINAL BLOCK .

GENERAL COMMENTS FOR PARALLEL SYSTEMS

- **6K y 10KVA models allow installation of up to 3 units in parallel.**
- **Units to work in parallel must be connected as indicated in this section.**
- **Parallel system must be configured and started up according to instructions given dedicated section of this manual.**
- **Any mistake in connection, configuration or starting up procedure could produce permanent damage UPS**

PARALLEL UPS CONNECTION

- **Make sure the UPS is Off before starting the installation**
- **Remember to check all wires to be connected (including external batteries)**
- **are not powered before manipulating them.**

UPS TERMINAL BLOCK PREPARATION

Remove cover of terminal block at the UPS rear panel.
DO NOT use a wall power outlet to plug UPS to AC Line as usually ratings of this kind of outlets are not enough to power 6KVA UPS. UPS Input wire must be connected directly to electric panel board.

UPS INPUT AND OUTPUT CONNECTIONS

First, connect ground wires. Ground wires must be FIRST to be connected and LAST to be disconnected.

a) Grounding Wires: Connect AC ground of both UPS according to figures.

b) AC Input Wires: AC Input wires must come from individual electrical circuit breakers on electrical panel board before being connected to UPS terminal block.

c) AC Output Wires: AC output wires must be connected directly to external circuit breakers of bigger capacity.

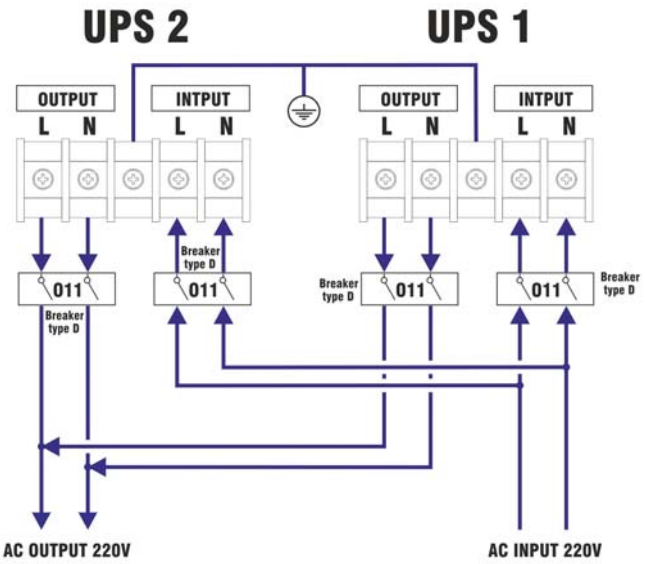
d) If UPS is EX model, external battery banks must be connected to dedicated connector located in rear panel of UPS.

e) Control Cables for Parallel Connection: Connect Parallel Cable and shared current according to figures.

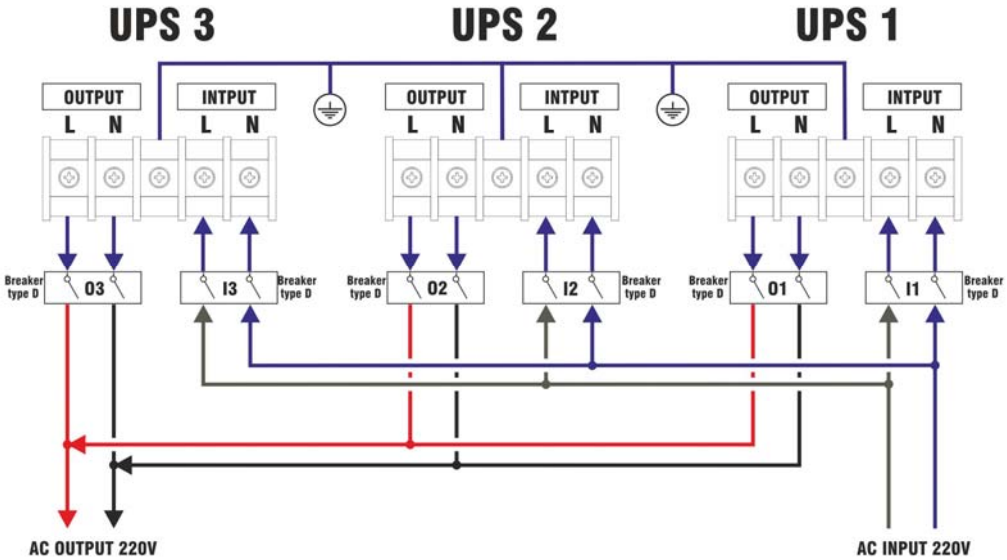
WARNING – EXTERNAL BATTERIES:
If UPS to be connected in parallel have external batteries it is mandatory each UPS counts with its own battery pack. Parallel connection cannot be performed if only one of two (or two or three) UPS have external batteries. Permanent damages will be produced in UPS if this warning is not followed.

PARALLEL - UPS RT9 - AC LINES CONNECTION - 2 & 3 UPS

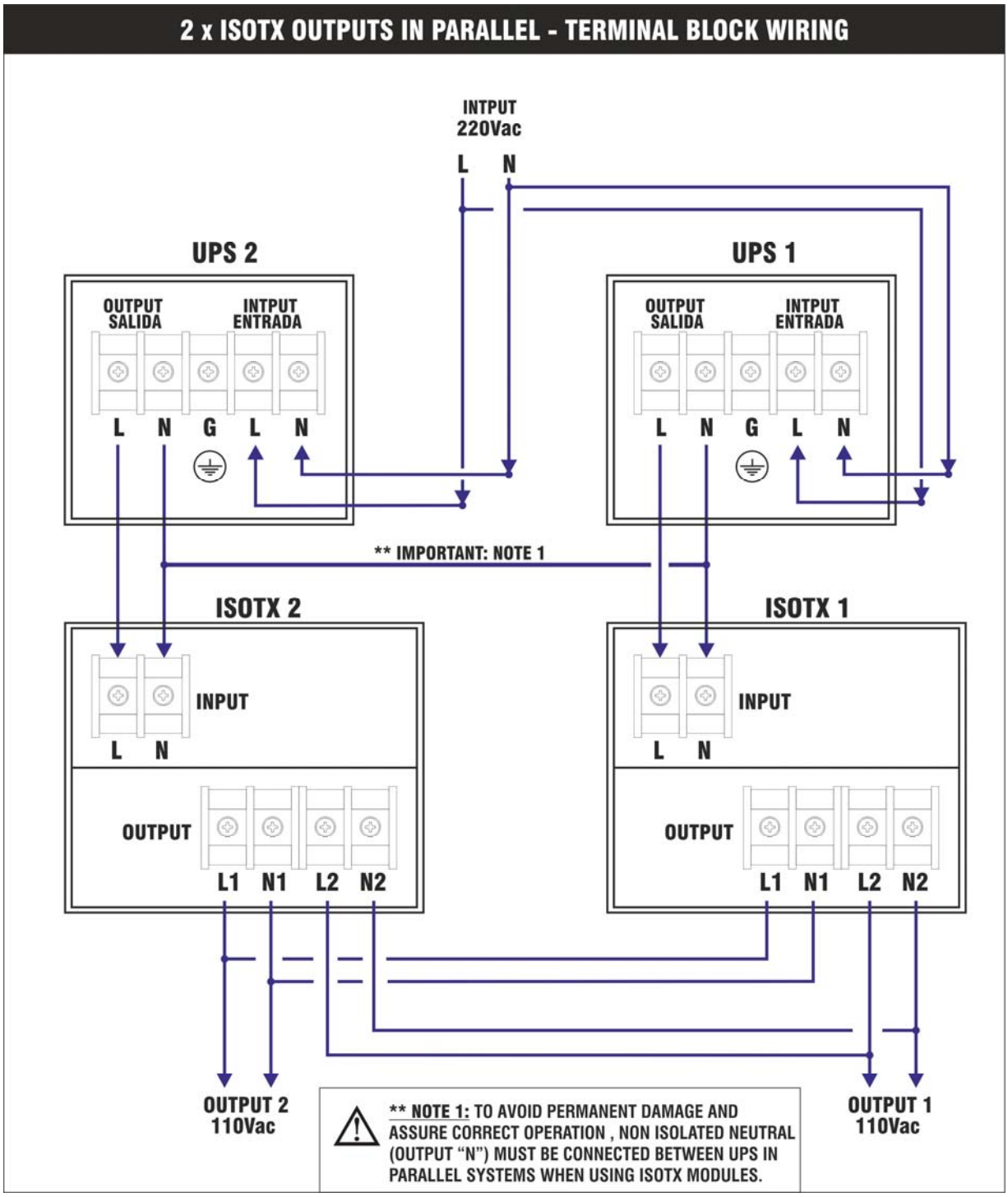
2 x RT9 UPS - PARALLEL - TERMINAL BLOCK WIRING



3 x RT9 UPS - PARALLEL - TERMINAL BLOCK WIRING



PARALLEL - USING ISOTX - AC LINES CONNECTION



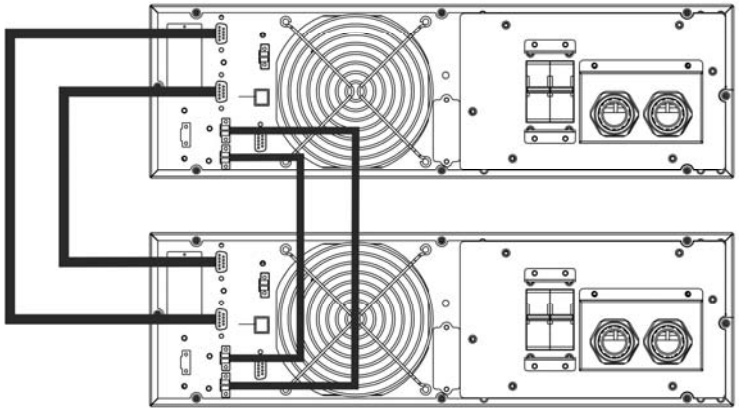
**** NOTE 1:**

WARNING:

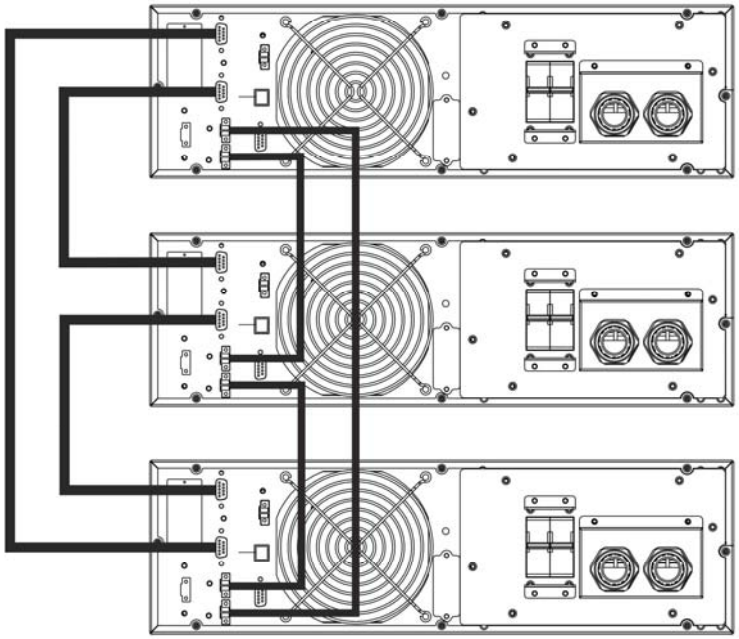
In parallel systems with ISOTX modules, to avoid permanent damage or incorrect operation, it is important to connect output neutral between all UPS as indicated in above drawing.

PARALLEL UPS - CONTROL WIRES CONNECTION

2 x RT9 UPS - PARALLEL - CONTROL & SHARE CURRENT WIRING



3 x RT9 UPS - PARALLEL - CONTROL & SHARE CURRENT WIRING



6.- START-UP: SINGLE UPS

INSPECTION BEFORE START UP

1. Make sure all wires are tightly connected to terminal block. Any loose connection will produce overheating, failures and damage to UPS.
2. Make sure all instructions of sections 3 and 4 have been performed correctly.
3. Put the terminal block cover back in its position to avoid access to wiring
4. Check EPO connections.
   - EPO Port closed (Wired): EPO function disabled
   - EPO port connected to an emergency switch: EPO function available by activation of Emergency Switch; which must be “Normally Closed” type in order to guarantee that UPS will shut down when circuit opens.
5. Check Maintenance Bypass Switch (MBS) located in UPS rear panel is in UPS position and its cover is duly installed.
6. Make sure all external protection devices in input and output lines are in open (OFF) position.

SINGLE UPS - START UP PROCEDURE

1. Make sure all equipments connected to UPS are off
2. Power AC input at electrical panel board by setting input AC Lines Circuit Breaker to ON
3. Put Battery Bank breaker to ON (Only for Ex Models, If using external battery pack)
4. Put AC INPUT Breaker to ON in UPS rear panel.
5. LCD in front panel starts to show bypass mode. UPS Outputs are powered although UPS is off because it is on By-Pass mode. At this moment output power is being supplied by AC Input Power Line.
6. Start up the UPS by pressing <ON> push button in front panel to access "TURN ON" menu. Confirm "YES" option.
7. Few seconds after, the UPS leaves By-Pass mode to enter in Normal Online Mode, also known as “AC Mode”
8. Switch external output breaker to ON position (not included with the UPS).
9. Power on sequentially each protected equipments. The front panel LCD should show the load increase as equipments start.
10. Once all equipments are on, the total power consumption (load) should not exceed UPS capacity.
11. At this moment UPS working under NORMAL AC-MODE and the system is supplied by UPS.

NOTE 1: If any error or warning message in indicated in LCD please revise Troubleshooting section of this manual.

NOTE 2: UPS batteries maybe are not fully charged. UPS could require about 4 to 6 hours to recharge batteries up to 100% of their capacity.

7.- START-UP: PARALLEL UPS

REQUIREMENTS FOR PARALLEL SYSTEM

WARNING: Before starting up this parallel UPS system is mandatory to comply with all below requirements.

1.- Maximum quantity of UPS to be connected in parallel is 3. Do not try to connect more than 3 units in parallel.
2.- All UPS to be connected in parallel system must be same model (all 6K or all 10K) with same firmware version. Please ask your distributor to confirm firmware is the same in case of doubts. UPS belonging to same manufacturing batch have same firmware version.
3.- UPS configuration (configuration parameters of LCD menu) must be the same for all UPS.
4.- All MBS (Maintenance Bypass Switch) located in rear panels must be in "UPS" position and switch covers must be properly installed.
5.- In case of using external battery packs, each UPS must has same external battery packs quantity and type.
6.- All control parallel cables (parallel cables and current share cables) must be properly connected in UPS rear panels as indicated in section 5 of this manual.
7.- Make sure total available capacity (in Watts) of all UPS to be connected in parallel is higher than load to be connected to UPS system. It is recommendable total UPS power is at least 25% higher to total load. If UPS system will work as n+1 redundant system, make sure total UPS capacity after removing one UPS is higher than maximum load to be connected. If not remaining UPS will not be able to support connected load when one of the units was removed.

INSPECTION BEFORE START UP

1. Make sure all wires are tightly connected to terminal block. Any loose connection will produce overheating, failures and damage to UPS.
2. Make sure all instructions of sections 3 and 5 have been performed correctly.
3. Put the terminal block cover back in its position to avoid access to wiring
4. Check EPO connections.
   - EPO Port closed (Wired): EPO function disabled
   - EPO port connected to an emergency switch: EPO function available by activation of Emergency Switch; which must be “Normally Closed” type in order to guarantee that UPS will shut down when circuit opens.
5. Check Maintenance Bypass Switch (MBS) located in UPS rear panel is in UPS position and its cover is duly installed.
6. Make sure all external protection devices in input and output lines are in open (OFF) position.
7. Check control parallel cables are connected according to section 5 of this manual.

START UP FOR PARALLEL UPS SYSTEM

WARNING: Make sure all requirements and previous inspection have been revised and complied before initiating start up procedure. If not please do not try to continue with start-up procedure.

1.- Make sure all equipments to be protected and connected to UPS output are in OFF condition.

2.- Check AC input breaker located in each UPS rear panel is in OFF position.

3.- Power on main AC input in external electrical panel.

4.- If UPS are using external battery packs, set to ON all DC breakers to connect external DC packs to UPS.

5.- Power on UPS # 1: Set to "ON" AC input breaker located in rear panel of UPS No. 1. Wait until UPS No.1 completes auto-checking and Bypass LED lights continuously.

6.- Power on UPS # 2: Set to "ON" AC input breaker located in rear panel of UPS No. 2. Wait until UPS No.2 completes auto-checking and Bypass LED lights continuously.

7.-In case of having 3 UPS in the system, power on UPS # 3.

IMPORTANT: UPS must be powered on one by one. First UPS 1, then UPS 2 and finally UPS 3. If AC input breakers are activated all at same time, an error message could be activated. If it occurs, reinitiate procedure sequentially. Error message must be previously reset according to warning and error section in this manual

8.- When rear panel AC breaker is set to "ON", UPS recognize all other UPS previously powered ON in the parallel system and will get its own parallel identification as Master, Slave1 and Slave2.

UPS 1	UPS 2	UPS 3
Bypass Mode Parallel: Master IP: 208.0V / 50Hz OP: 208.0V/50Hz Batt: 273.0V/99% Load: 0%	Bypass Mode Parallel: Slave1 IP: 208.0V / 50Hz OP: 208.0V/50Hz Batt: 273.0V/99% Load: 0%	Bypass Mode Parallel: Slave2 IP: 208.0V / 50Hz OP: 208.0V/50Hz Batt: 273.0V/99% Load: 0%

9.- At this moment all UPS are in bypass mode waiting for been turned on.

10.- Before turning on, configuration menu in each UPS LCD must be revised to select desired configuration.
It is mandatory to use same configuration in all configuration parameters for all UPS of the system.

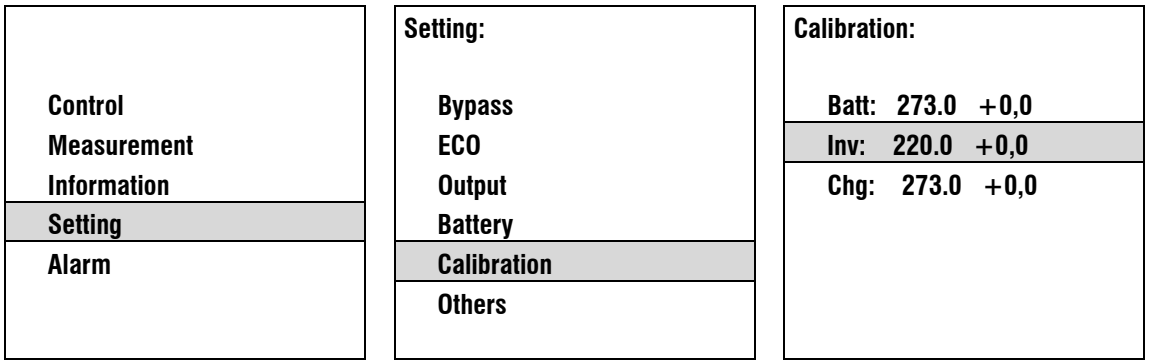
11.- Once configuration has been selected and verified, all UPS can be started up by selecting "ON" push button in front panel. Please press "ON" push button for each UPS and confirm all UPS change from BYPASS mode to LINE mode.

UPS 1	UPS 2	UPS 3
Line Mode Parallel: Master IP: 208.0V / 50Hz OP: 220.0V/50Hz Batt: 273.0V/99% Load: 0%	Line Mode Parallel: Slave1 IP: 208.0V / 50Hz OP: 220.0V/50Hz Batt: 273.0V/99% Load: 0%	Line Mode Parallel: Slave2 IP: 208.0V / 50Hz OP: 220.0V/50Hz Batt: 273.0V/99% Load: 0%

At this moment all UPS are in ONLINE mode. UPS output is generated by UPS inverter.

12.- Now we must measure output voltage in each UPS using a digital multi-meter. All output voltages must be similar. Maximum acceptable deviation should be 2Vac or lower. Typically 1Vac.

** If deviation is higher than 2Vac, we suggest to adjust voltage output in UPS by SETTING / CALIBRATION / INVERTER section of configuration menu.



13.- If AC output voltages are as expected, please set to "ON" external output breakers for all UPS progressively. Start with UPS Nº 1, then UPS Nº2, etc. After that, all UPS outputs are connected in parallel.

14. Check to confirm there are no error or alarm messages on LCDs. At this moment all UPS are working in NORMAL Online mode and connected in parallel.

15.- It is time to power on equipments connected to UPS output. Power on progressively one by one. Check on UPS LCDs how power output rises meanwhile equipments are powered on.

** Once all output load is connected check power output is below 100%.

** At this moment, UPS parallel system is powering your system in NORMAL Online mode.

8.- OPERATION INTERFACE

UPS FRONT PANEL: PUSH BUTTON

ON / ENTER	**ON** : Goes directly to "TURN-ON" menu. **ENTER** : It works as <ENTER> or confirmation key for screens options
OFF / ESCAPE	**OFF** : Goes directly to "TURN-OFF" menu. **ESCAPE** : It works as <ESCAPE> key for screens options.
UP	**UP** : It works as <UP> key when navigating through screens menu.
DOWN	**DOWN** : It works as <DOWN> key when moving through screens menu.
UP + **DOWN**	LCD 90º TURNING : Rotates LCD 90º.

UPS FRONT PANEL: LED INDICATOR LIGHTS

There are 4 LED indication lights in front panel, located below LCD. These 4 LEDs describe UPS condition as follow:

MODE	Bypass	Line	Battery	Fault
UPS is in Auto-check mode during start-up.	●	●	●	●
BYPASS Mode	●	○	○	○
NORMAL Mode	○	●	○	○
BATTERY Mode	○	○	●	○
BATTERY TEST in progress	○	●	●	○
ECO Mode Activated	●	●	○	○
UPS in Failure	○	○	○	●

● LED = ON / ○ LED = OFF

UPS FRONT PANEL: LCD

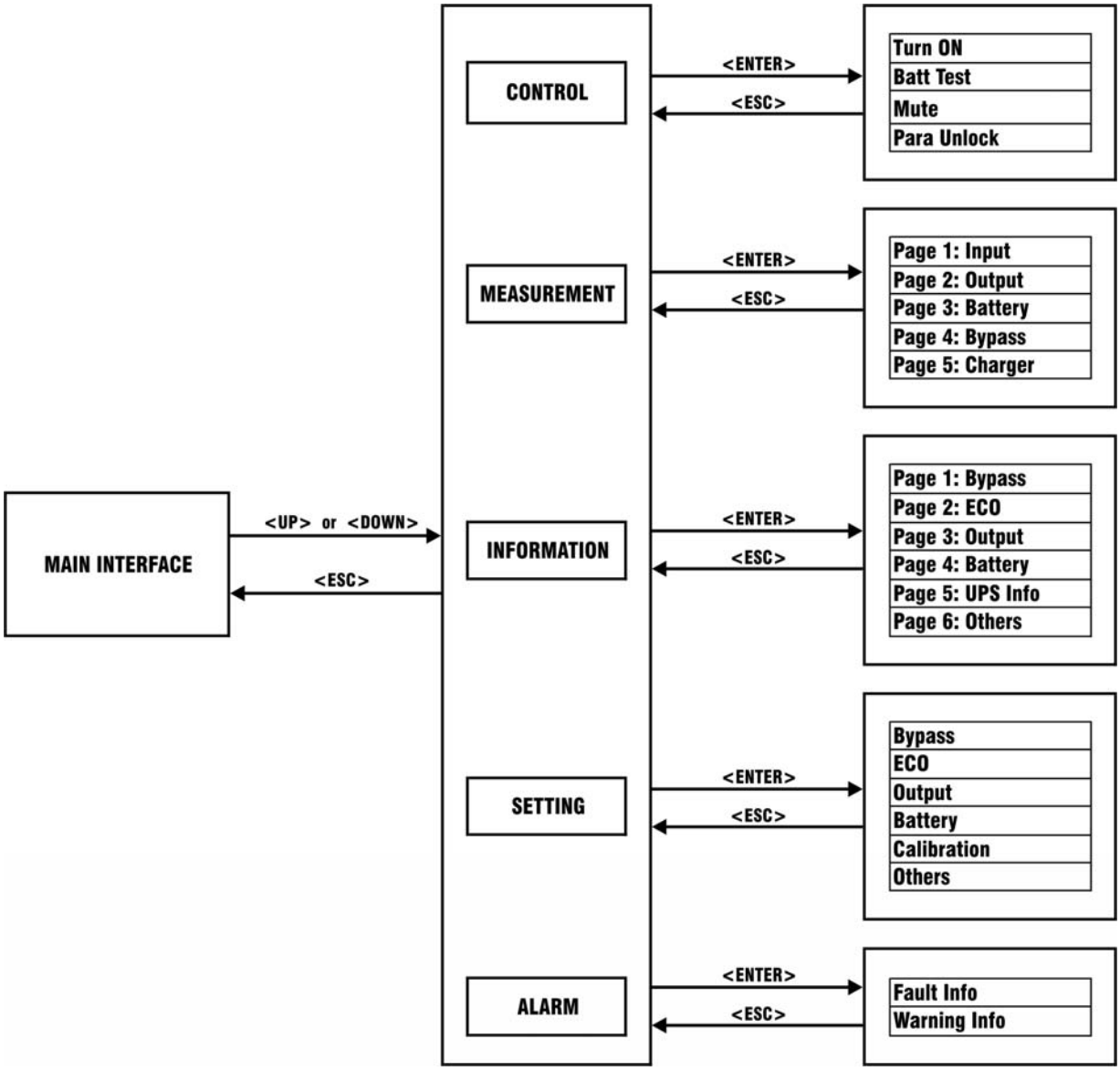
This UPS has a sophisticated LCD able to display all important information related to input line, UPS status and values, operation mode and error and alarm messages. It is a powerful information tool to know what is happening at any moment.
LCD is also the configuration interface for all configurable parameters.

MAIN INTERFACE:

Line Mode

IP: 208.0V / 50Hz
OP: 220.0V/50Hz
Batt: 273.0V/99%
Load: 0%
Warning: XX

LCD MENU:



9.- OPERATION: SINGLE UPS

This is a True On Line Double Conversion UPS and it is designed to offer clean, bump-less and highest quality power to your computer related equipments protecting also your valuable data. Power delivered by UPS is 100% sine wave as main line.
According to AC Line status the UPS may operate in following modes:

ONLINE NORMAL Mode

When UPS is turned off by selecting ON push button in front panel and AC Line is normal it enters into ONLINE NORMAL mode. Under this mode UPS Inverter powers outputs and the energy is taken from DC voltage coming from AC/DC converter. Batteries are charged by AC Line if required.

BATTERY Mode (Also known Inverter Mode)

Under ONLINE NORMAL mode when UPS detects a problem in AC input Line or black out it enters in battery mode. Under this mode UPS takes energy from its batteries to power outputs. There are no transfers neither micro-cuts on UPS outputs as inverter was already working, the only difference is that energy for outputs is now coming from batteries. Transfer time is actually Zero (0 ms). UPS also can enter in battery mode when it is turned on without an acceptable AC input.

ECO Mode

There is an energy saving function that makes UPS to power its outputs with AC Line directly. If under this mode, UPS detects AC input is out of acceptable range it enters into Normal Online mode.
If an AC failure occurs under ECO mode the UPS's inverter starts working draining energy from batteries. There is a transfer time of 4 ms typical. This mode is configured and activated from LCD panel. There is specific input voltage range and input frequency range to configure for ECO mode.

BYPASS Mode

Under BYPASS mode, UPS outputs are powered by AC Line. UPS is out of the circuit. This mode can be caused by operator when OFF button is activated, but it may also happen automatically by UPS malfunction or overload detected at UPS outputs. If external (optional) BYPASS module is installed, UPS goes to BYPASS mode when protection cover of the bypass switch is removed.

FREQUENCY CONVERSION Function

This UPS offers a very sophisticated function named frequency conversion (CF) that allows UPS to generate power output at determined frequency value (50Hz or 60Hz) no matter input frequency value. UPs will be able to generate output at 50Hz even input source is at 60Hz or generate 60Hz even if connected to 50Hz source.
This function can be configured and activated by LCD. Revise configuration section of this manual.

IMPORTANT NOTES:

1.- Under CF mode, UPS will disable BYPASS mode. Since UPS has been configured to generate output with frequency value different to input frequency, BYPASS mode is disable to avoid a not acceptable frequency value at output.
2.- When CF function is activated, maximum power output is de-rated to 60% of maximum nominal capacity. For example, for a 10KVA (8KW) model, when CF is activated maximum output is decreased to 6KVA (4.8KW).

WARNING Mode

Under some situations UPS reports an alarm or warning message in the LCD and buzzer will be activated with intermittent beep. Usually UPS keep working in online mode.

FAULT Mode

When important problem is detected inside or outside the UPS, it goes to fault mode reporting an error message on LCD and activating buzzer with a continuous beep. Under this mode UPS usually goes to BYPASS mode. Fault LED turns on in red color when fault mode is adopted.

10.- OPERATION: PARALLEL UPS

UPS operation modes for UPS in parallel are basically same than described for single UPS.
However it is important to remark all UPS in parallel system must work under same mode at same time. Parallel function does not allow different operation modes between UPS of the system.

Removing an UPS from a Parallel System

There are 2 procedures to isolate and remove one UPs from operative parallel system:

A) Total Power-Off: Powering off all UPS of the system. This is the less risky procedure.

B) Keeping Parallel system in ONLINE mode:
First check all below requirements are complied before trying to follow this procedure.
Requirements for removing one UPS in operative UPS:
1.- This operation must be performed only by qualified and trained personnel.
2.- This operation must be coordinated with the system administrator. System administrator must know about the related risks of this procedure since the system could be shut down during operation because external reasons like:
- If during this operation occurs a failure in main AC line, battery backup of remaining UPS could not be enough to keep system running before reconnecting removed unit.
- External breakers could be activated randomly during operation so system could be tripped.

3.- There must be a detailed plan to perform this procedure identifying all maintenance activities to be performed on removed unit before reconnecting it.
4.- Remaining UPS must be able to support the power system after selected unit is removed.
5.- Each UPS must have their own external protections to allow total electrical isolation
6.- There must be enough physical room to allow comfortable access to all UPS of the system.
Note: if any of the above requirements cannot be complied, below procedure must not be performed.

In case all requirements can be complied proceed as follow:
1.- Power off selected UPS by OFF button in front panel.
Note: OFF button must be selected twice. If OFF is selected only one time, UPS will not respond. Once UPS is turned off it will shut down its outputs but remaining LCD on. This UPS will not go to bypass mode since it is working in UPS system with other UPS generating their output from their inverters. At this moment any failure in AC main line must be supported by operative UPS.
2.- Set AC input breaker located in rear panel of the selected UPS to OFF position.
3.- Set external output breakers of selected UPS to OFF position.
4.- Set external input breakers of selected UPS to OFF position.
5.- Once LCD is turned Off, in selected UPS to be isolated, disconnect control parallel cables (parallel cables and current share cables) from its rear panel. Other operative UPS must keep their control parallel cables connected.
NOTE: If you disconnect parallel control cables in any of the operative UPS of the system, a communication problem will occur and the parallel system will be shut down.

At this moment selected UPS is currently powered off and isolated so that it can be serviced or simply removed.

Adding an UPS to a Parallel System

- For adding a new UPS to an operating system, all UPS must be turned off and all equipments must be disconnected from UPS outputs.
- Total UPS quantity must be 3 or lower.
- Firmware of all UPS must be compatible for allowing parallel functionality.
- New UPs must be configured with similar LCD configuration menu than current UPS of the system.
- Follow the procedure explained in Installation Section of this manual.

11.- UPS CONFIGUIRATION

MAIN INTERFACE SCREEN:
This is the first screen presented on LCD when UPS is powered on (without turning UPS on).
If front panel is not operated LCD will go to this screen after few seconds.

Bypass Mode

IP: 208.0V / 50Hz
OP: 208.0V/50Hz
Batt: 273.0V/99%
Load: 0%

From this main interface all others menu screens can be selected by UP / DOWN buttons in front panel according to section 8 of this manual.

Configurable functions according to UPS mode

Not all functions are available in all operation modes. When functions is not available under current operation mode, related option will not be presented on screen.

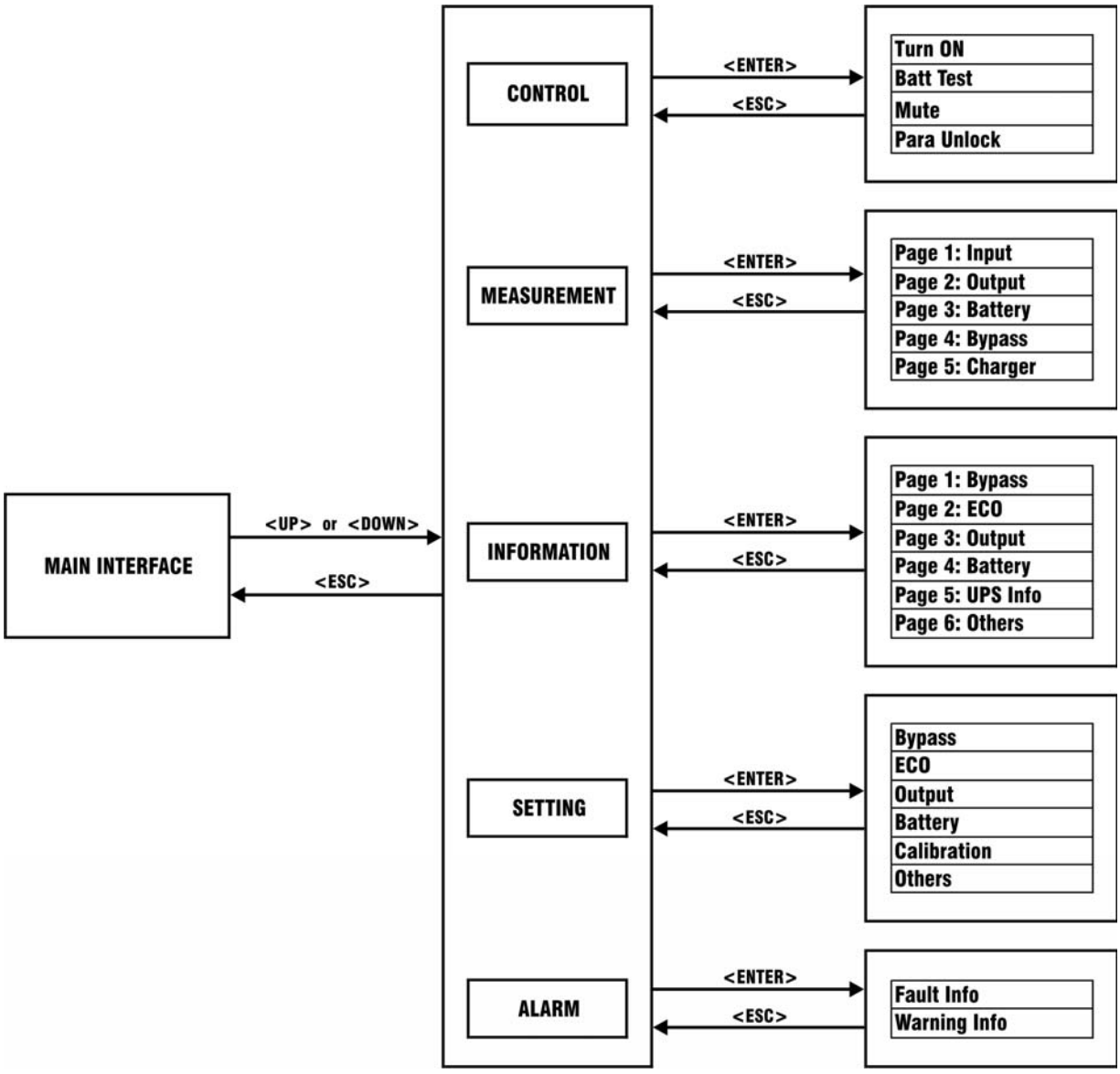
Code	Description	Bypass	AC	ECO	CVCF	Battery	Battery Test
1	Output Voltage	●					
2	Output Frequency	●					
3	Voltage Range for BYPASS	●					
4	Frequency Range for BYPASS	●					
5	ECO Mode: Enable and Disable	●					
6	Voltage Range for ECO mode	●					
7	Frequency Range ECO mode	●					
8	BYPASS mode	●	●				
9	Battery Backup Security Time	●	●	●	●	●	●
10	Programmable Output *(note 1)*	●	●	●	●	●	●
11	Programmable Output Settings *(note 1)*	●	●	●	●	●	●
11	NO-Battery startup function	●	●	●	●	●	●
13	Battery Voltage adjustment	●	●	●	●	●	●
14	Battery Charger Voltage adjustment	●	●	●	●	●	●
15	UPS output voltage adjustment		●		●	●	

"●" Function available.

Configuration menu functions and screens

Screens menu is divided in 5 different modules as follow:

- F1. CONTROL
- F2. MEASUREMENT
- F3. INFORMATION
- F4. SETTING
- F5. ALARM



F1. CONTROL FUNCTIONS:

Control --> Turn On Batt Test Mute Para Unlock	Turn On ? --> Yes No	Line Mode IP: 208.0V / 50Hz OP: 220.0V/50Hz Batt: 273.0V/99% Load: 50%
Control Turn On --> Batt Test Mute Para Unlock	Battery Test ? --> Yes No	Battery Test Mode IP: 208.0V / 50Hz OP: 220.0V/50Hz Batt: 245.0V/50% Load: 0%
Control Turn On Batt Test --> Mute Para Unlock	Mute ? --> Yes No	Battery Mode IP: 0.0V / 0.0Hz OP: 220.0V/50Hz Batt: 245.0V/50% Load: 50%
Control Turn On Batt Test Mute --> Para Unlock	Is single or parallel cable OK ?? --> Yes No	Bypass Mode IP: 208.0V / 50Hz OP: 208.0V/50Hz Batt: 273.0V/99% Load: 0%

"Para Unlock" is only available when UPS are connected in parallel system.

F2. MEASUREMENT FUNCTIONS

Input: 1/5
Volt: 220.0V
Freq: 50.0Hz

Output: 2/5
Volt: 220.0V
Current: 43,0A
Freq: 50.0Hz
Inv: 220.0V
Apparent Power: 10000VA
Active Power: 9000W
Load: 100%

Battery: 3/5
Volt: 273.0V
Cap: 100%
Discharge Time:
00:00:00

Bypass: 4/5
Volt: 220.0V
Freq: 50.0Hz

Charger: 5/5
Volt: 273.0V
Status: ON

F3. INFORMATION FUNCTIONS

Bypass: 1/6
Status: Open
Enable
High Loss: 264V
Low Loss: 110V
High Loss: 54Hz
Low Loss: 46Hz

ECO: 2/6
Status: Open
High Loss: 232V
Low Loss: 184V
High Loss: 52Hz
Low Loss: 48Hz

Output: 3/6
Volt: 220.0V
Freq: Auto
CVCF: Disable

Battery: 4/6
Backup Time:
990 min.
Batt Test Type:
Short Time:
10 sec.

UPS Info: 5/6
UPS Model: 10K
DSP Ver: xx-xx
MCU Ver: xx-xx
Unit Name: XXXXXXXXXX
Manufacturer: XXXXXXX

Others: 5/6
Hot Standby: Disable
Bypass Mute: Disable
Batt Mute: Disable
Fault Mute: Disable

F4. SETTING FUNCTIONS

This menu is used to adjust most important parameters of the UPS as described in below screen. Some of below settings cannot be changed in all operation modes. Please check functions availability according to UPS mode in first page of this section.

```
      Setting:

-->   Bypass
      ECO
      Output
      Battery
      Calibration
      Others
```

SETTING / BYPASS

```
      Bypass:

-->   Status:          Open
                       Enable
      High Loss V:     264V
      Low Loss: V:     110V
      High Loss: F:    54Hz
      Low Loss: F:     46Hz
```

```
      Bypass:

-->   Status:          Forbid

      High Loss V:     264V
      Low Loss: V:     110V
      High Loss: F:    54Hz
      Low Loss: F:     46Hz
```

STATUS OPEN: Bypass allowed: UPS will run at bypass depending on ENABLE/DISABLE parameter setting.

STATUS FORBID: Bypass NOT allowed under any situation.

ENABLE: This option is available when previously has been selected OPEN option. ENABLE allows bypass mode.

DISABLE: Manual bypass NOT allowed so when UPS is turned off it will not go to bypass mode. Instead of that UPS will go to output power off condition.

HIGH LOSS V: Acceptable high limit for input voltage for UPS in bypass mode.

LOWLOSS V: Acceptable min. limit for input voltage for UPS in bypass mode.

HIGH LOSS F: Acceptable high limit for input frequency for UPS in bypass mode.

LOWLOSS F: Acceptable min. limit for input frequency for UPS in bypass mode.

SETTING / ECO

ECO: --> **Status:** **Disable** **High Loss:** **232V** **Low Loss:** **184V** **High Loss:** **52Hz** **Low Loss:** **48Hz**	**STATUS ENABLE:** ECO function enable **STATUS DISABLE:** ECO function disable **HIGH LOSS V:** Acceptable high limit for input voltage for UPS in ECO mode. **LOWLOSS V:** Acceptable min. limit for input voltage for UPS in ECO mode. **HIGH LOSS F:** Acceptable high limit for input frequency for UPS in ECO mode. **LOWLOSS F:** Acceptable min. limit for input frequency for UPS in ECO mode.

SETTING / OUTPUT

Output: --> **Volt:** **220.0V** **Freq:** **Auto** **CVCF:** **Disable**	**VOLT:** **208:** set output voltage to 208Vac **220:** set output voltage to 2220Vac **230:** set output voltage to 230Vac **240:** set output voltage to 240Vac **FREQ:** **50Hz:** Set output to 50Hz **60Hz**: Set output to 60Hz **ATO:** Set output according to input frequency. From 46-54Hz set to 50Hz. From 56 to 64Hz set to 60Hz. **CVCF:** Set if frequency conversion is activated. **Enable:** Output frequency is fixed in 50Hz or 60Hz according to previous FREQ setting **Disable:** Converter function disables. Output frequency will be synchronized with input frequency.

SETTING / BATTERY

Battery:

--> DisChg Protect: Enable
990 min.
Batt Test Type:

Till Batt Low

Battery:

--> DisChg Protect: Enable
990 min.
Batt Test Type:
Short Time:
10 sec

Battery:

--> DisChg Protect: Enable
990 min.
Batt Test Type:
Long Time:
10 min

DISCHARGE PROTECTION FUNCTION:

Enable: UPS will shutdown automatically to protect batteries. Shutdown will be produced according to time in minutes set below (from 000 to 990 min.)

Disable: Batteries protection disable. UPS will run until reach very low battery level.

000-990: Set time in minutes for Discharge protection function.

BATTERY TEST TYPE:

Short Time: Battery tests will be performed during 10 seconds.

Long Time: Battery tests will be performed during 10 minutes.

Till Battery Low: Battery tests will be performed until reaching battery low level.

SETTING / CALIBRATION

Calibration:

--> Batt: 273.0 +0.0
Inv: 220.0 +0.0
Chg: 273.0 +0.0

BATT: Calibrate value indicated in LCD for battery voltage.

INV: Adjust the inverter output voltage. Available only in:
Online mode
Battery mode
CVCF mode

CHG: Adjust the charger output voltage. Available only in:
Bypass mode
Online mode
ECO mode
CVCF mode
** Batteries must be disconnected from charger before making any adjustment.

SETTING / OTHERS

Others: --> **Hot Standby** **Backup Time**	**HOT STANDBY:** **ENABLE:** It allows UPS to restart after a long AC failure even UPS has no batteries connected. **DISABLE:** It allows UPS to work as standard UPS. It will only restart when AC recovery is detected if UPS has batteries connected. **BACKUP TIME PARAMETERS:** **BATT GROUPS:** Set the quantity of battery groups connected from 1 to 6. Default is 1. **BATT CAP:** Set the battery capacity in AH. Default is 9AH. **FACTOR:** This factor is used to calculate remaining backup time displayed on LCD. Default is 1.
Hot Standby: --> **Status: Disable**	
Backup Time: --> **Batt Groups: 1** **Batt Cap: 9AH** **Factor: 1.0**	

F5. ALARMS & ERROR SCREEN

Alarm Info **Fault:** **14: Output Short** **Warning:** **01: Batt Open**	**In this screen warnings and faults are recorded.** **Warning and error messages are described in following tables.**

12.- ERROR CODES, ALARMS & TROUBLESHOOTING

ERROR / FAILURE CODES ON LCD

STATUS	FAULT LED	CODE	DESCRIPTION	SUGGESTION
FAULT	ON-RED	**01**	Bus Start Fail	Internal converter fails. PSDR board need to be replaced. Contact service support
FAULT	ON-RED	**02**	Bus Over	Main AC input or load transient make DC BUS voltage high or converter fails. Try to shutdown and restart UPS. If fails again contact service support.
FAULT	ON-RED	**03**	Bus Under	Internal converter fails. PSDR board need to be replaced. Contact service support
FAULT	ON-RED	**04**	Bus Unbalance	Load connected to UPS output is abnormal (too inductive or halfwave). Disconnect load and shutdown and restart UPS. If fail is solved the problem is related to kind of load connected to UPS.If fail continues contact service support.
FAULT	ON-RED	**11**	Inverter Start Fail	Inverter Fails. Contact service support
FAULT	ON-RED	**12**	Inverter Voltage High	Inverter Fails. Contact service support
FAULT	ON-RED	**13**	Inverter Voltage Low	Inverter Fails. Contact service support
FAULT	ON-RED	**14**	Output Short	A short circuit was detected at UPS output. Solve short circuit and restart UPS.
FAULT	ON-RED	**1A**	Negative Power	UPS power output is negative. There is a power feedback from UPS outputs because a regenerative load or because a problem in current control in a parallel system.
FAULT	ON-RED	**21**	Battery SCR Short	Contact service support.
FAULT	ON-RED	**24**	Inverter Relay Short	Contact service support.
FAULT	ON-RED	**35**	Parallel Comm. Fail	Revise all parallel cables of the system.
FAULT	ON-RED	**36**	Output Current Unbalance	Revise AC wiring of the parallel system.
FAULT	ON-RED	**41**	Over Temperature	Internal UPS temperature above normal limit. Possible reasons: Fan blocked or ventilation windows are blocked or environment temperature is too hot combined with high load connected to UPS
FAULT	ON-RED	**42**	CPU Comm. Fail	Contact service support.
FAULT	ON-RED	**43**	Overload	Power consumption of equipments connected to UPS output is too high. Remove no critical equipment from UPS

ALARM CODES ON LCD

STATUS	FAULT LED	CODE	DESCRIPTION	SUGGESTION
WARNING	OFF	**01**	Battery Open	Check Battery cables and battery fuse
WARNING	OFF	**07**	Over Charge	Battery quantity is not OK or Charger Voltage is too high or Charger is damaged
WARNING	OFF	**08**	Battery Low	Batteries under low voltage or Battery quantity is not OK or Battery exhausted
WARNING	OFF	**09**	UPS overload	Connected load to UPS is above UPS max capacity.
WARNING	OFF	**0A**	Fan Error	Fan blocked or fan damaged or fan detection circuit damaged
WARNING	OFF	**0B**	EPO activated	EPO jumper has been removed or emergency switch connected to EPO port is activated
WARNING	OFF	**0D**	Over Temperature	Internal UPS temperature above normal limit. Possible reasons: Fan blocked or ventilation windows are blocked or environment temperature is too hot combined with high load connected to UPS
WARNING	OFF	**0E**	Charger Fail	Charger fail
WARNING	OFF	**10**	Input fuse open	Input AC fuse in power stage of the UPS is burnt
WARNING	OFF	**33**	External and repetitive overload	UPS has detected 3 repetitive overload at their output in less than 30 min.
WARNING	OFF	**3A**	External bypass switch cover is open	Cover for external maintenance bypass switch has been removed or external bypass switch cable is disconnected.
WARNING	OFF	**3F**	Parallel Protection Activated	When a problem is detected in regards to parallel communication between some UPS in parallel warning code 3F is activated. Please check all parallel cables and go to CONTROL screen menu to unlock PARA UNLOCK parameter before trying to restart UPS.

13.- TECHNICAL SPECIFICATIONS

ONLINE RT9 UPS	6K-RT9	10K-RT9
Capacity / Capacidad	6KVA / 5.400W	10KVA / 9.000W
Output PF / FP de Salida:	0.9	0.9
INPUT / ENTRADA		
Input Voltage / Voltaje de Entrada	220Vac (single phase: L-N + ground / L-N + Tierra)	
Input Range / Rango de Entrada	Rated Input / Entrada Nominal: 208/220/230/240 Vac (176Vac-300Vac) +/- 3% @ 100% load (110Vac-300Vac) +/- 3% @ 50% load	
Frequency Range / Rango Frecuencia	40 - 70 Hz	
Phase / Fases	1 Phase+Ground / 1 Fase+Tierra	
Power Factor / Factor de Potencia	> 0.99 @ 100%load	
THDi	< 5% @ 100%load	
Slew Rate / Segumiento Frecuencia	1 Hz / s	
OUTPUT / SALIDA		
UPS	1 phase (L1-N1): 200/208/220/230/240Vac	
ISOTX (optional module)	Dual Isolated Outputs: 2 phases (L1-N1) + (L2-N2): 104/110/115/120Vac (L-N)	
Voltage Regulation / Regulación Salida	+/- 1% (Batt. Mode / Modo Batería)	
Frequency / Frecuencia (Batt. Mode)	50 Hz +/- 0.1 Hz / 60 Hz +/- 0.1 Hz	
Current Crest Ratio / Factor de Cresta	3:1 @ 100% load.	
THDv	< 3% @ Linear Load / Carga Lineal <4% @ No Linear Load / Carga no Lineal	
Transfer Times / Tiempos Transfer.	0 ms	
Waveform / Forma de Onda	Sine Wave / Sinusoidal Pura	
Power Outlets / Salidas	Terminal Block / Regleta de Conexión	
OVERLOAD / SOBRECARGA		
AC Mode / Modo Normal	100%~110%: 10m / 110%~130%: 1m / >130% : 1s	
Battery Mode / Modo Batería	100%~110%: 30s / 110%~130%: 10s / >130% : 1s	
EFFICIENCY / EFICIENCIA		
Eco Mode / Modo ECO	96% / 92% (EX / ISO)	
AC Mode / Modo AC	90% / 86% (EX / ISO)	
Battery Mode / Modo Batería	88% / 84% (EX / ISO)	
BATTERIES / BATERIAS		
Type and Qty / Tipo y Cantidad	Separate Cabinet	Separate Cabinet
Internal Batt. Pack / Bat. Internas	12V/7AH x 20 pcs	12V/9AH x 20 pcs
External Batt Cab. / Gab. Ext.	12V/7AH x 20 pcs	12V/9AH x 20 pcs
Typical Recharge T. / T. de Recarga		
Internal Battery Pack / Bat. Internas	3.5 H (90%)	4 H (90%)
External batt cabinet / Gabinete Ext.	Depending on external battery configuration (depende de cantidad de baterías externas)	
Charging Amps / Corriente de Carga	2.0 A (Max.)	
Charging Voltage / Voltaje Cargador	273.0 VDC	

ONLINE RT9 UPS	6K-RT9	10K-RT9
INDICATORS / INDICADORES		
LCD / Pantalla LCD	UPS status, Load level, Battery, Input/Output voltage, Discharge timer, and Fault conditions Estado del UPS, Consumo, Baterías, Voltaje Entrada-Salida, Tiempo Descarga, Diagnostico	
ALARM / ALARMAS		
Beep Alarm / Alarma sonora:	For Battery Mode, Low battery, Overload, UPS Failure / Modo Batería, Baja batería, Sobrecargas, Falla	
PRODUCT SIZE & WEIGHT / DIMENSIONES Y PESOS DEL EQUIPO		
D x W x H / Prof. x Ancho x Altura (mm)		
UPS module	580x438x133 [3U]	668x438x133 [3U]
Ext. Batt. Cabinet / Gabinete Bat. Ext.	580x438x133 [3U]	668x438x133 [3U]
ISOTX	580x438x133 [3U]	668x438x133 [3U]
Net Weight / Peso Neto (kgs)		
UPS	21	23
External batt cabinet / Gabinete Ext.	57	65
ISOTX (optional module)	55	75
PACKING / EMPAQUE		
D x W x H / Prof. x Ancho x Altura (mm)		
UPS module	Carton: 87x58x25 cm	
Ext. Batt. Cabinet / Gabinete Bat. Ext.	Carton: 87x58x25 cm	
ISOTX (optional module)	Carton: 87x58x25 cm	
Gross Weight / Peso Bruto (kgs)		
UPS module	23	25
External Battery Cabinet	59	67
ISOTX (optional module)	57	77
OPERATING / AMBIENTALES		
Humidity / Humedad	<95 % (non-condensing / no condensante)	
Temperature / Temperatura	0-40 ºC	
Noise Level / Ruido Producido	< 55dB @ 1m	
COMMUNICATION / COMUNICACION		
Smart RS-232 & USB ports	Windows® 98/2000/2003/XP/Vista/2008, Windows® 7 / 8, Linux, and MAC	
Intelligent Port (SNMP)	Optional LAN card / Comunicación LAN Ethernet opcional AS400 optional interface board / Interfaz AS400 - opcional	

Specifications can be modified to comply with special project requirements / Las especificaciones pueden modificarse para adaptarse a proyectos especiales

Specifications may change without further notice / Por motivos comerciales o técnicos las especificaciones pueden cambiar sin previo aviso.

Available Product Models / Modelos Disponibles:

* UPS including Battery Module and able to accept additional external batteries / UPS con módulo de baterías con capacidad de conexión a bateríuas ext. adicionales
* ISOTX: Isolation transformer option for Dual Isolated Outputs (2 lines of 110Vac) / Transformador de aislamiento con salida dual (2 x 110Vac)
* UPS RT9 6K/10K: 2 Cabs: UPS + Battery - (ISOTX module is optional) / UPS RT9 6K/10K: 2 gabinetes: UPS + Baterías - (ISOTX esopcional)

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Latin America Headquarters:
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Maracay.
Tel: +58 243-551.7023

14.- LIMITED WARRANTY

Support: If a failure or problem is detected please check troubleshooting section in user manual. If problem cannot be solved please contact authorized service center or authorized dealer.

Batteries: Rechargeable batteries can be charged and discharged hundreds of times. However they will eventually wear out. This is not a defect or failure so that batteries wear out is not covered by this warranty.
Battery lifetime will depend of operative conditions like working temperature, type and frequency of discharging cycles. Higher the temperature shorter will be the lifetime. Frequent and deep discharging cycles also will short lifetime. For critical applications batteries should be revised and replaced periodically. Long storage (longer than 6 months) without required recharging will wear out batteries. This situation is not covered by this limited warranty since this is not considered as a defect. Check recharging instructions on user manual.

Conditions Limited Warranty "PLUS"

1.- Subject to the conditions of this limited warranty, this product is warranted to be free from defects in materials and workmanship at the time of INTEGRA supplies the product.

- In Europe, warranty time is 2 years on electronic parts and 2 years on internal batteries from INTEGRA invoice date.
- In America, standard warranty times could vary depending on country/region or can be extended by purchasing warranty options. Please check warranty plans and extensions with your local distributor.

2.- If during the warranty period, this product fails to operate under normal use and service, due to defects in materials or workmanship, authorized distributor or service center will, at their option, either repair or replace the product in accordance with terms and conditions stipulated herein. Transportation expenses are not covered by this limited warranty.
3.- Warranty is valid only if the original invoice issued by INTEGRA, specifying date of purchase, serial number and name of the dealer, is presented with the product to be revised. INTEGRA and authorized partners reserve the right to refuse warranty service if any of this information has been removed, changed or missing in original invoice document.
4.- If product is repaired or replaced, repaired or replaced product will be warranted for the remaining time of the original warranty or for 90 days on repaired part from date of repair, whichever is longer.
5.- INTEGRA or their distribution/service partners reserve the right to charge handling fee if returned product is free of failure or it is out of warranty because any of the reasons described in this warranty.
6.- If product is out of warranty a reparation proposal will be sent to the user for his approval. If proposal is not accepted, service center will keep product available for the user during 60 continuous days. After this period product would be disposed and user will not be able to rise any claim.
7.- Rechargeable batteries, like included in this product, will definitively wear out even under normal operation. This is not a defect or failure so it is not covered by this warranty.
8.- This warranty does not cover batteries wear out caused by improper or long storage (over 6 months without required recharging indicated in product manual). Even performing recharging procedure this product cannot be storage longer than 18 months. Problems on batteries caused by this kind of long storage are not covered by this warranty.
9.- This warranty does not cover product failures caused by installations, modifications or repair performed by non authorized person. If product is open by not authorized technician warranty will be considered void. This warranty does not cover failure caused by inadequate installation or maintenance, misuse, accidents, fire or floods.
10.- This product can include protection devices like input fuse or input breaker. Activation of this kind of devices is not a failure it is caused by an improper product installation. Input fuse or breaker reset or replacement is not covered by this warranty.
11.- This warranty does not cover damages produced during transportation from user to technical service caused by improper packing of the product by user.
12.- Warranty terms and conditions cannot be modified or extended by third parties without written approval of INTEGRA.

Limited Warranty "PLUS"

- INTEGRA does not warrant that the operation of this product will be uninterrupted or error-free during its lifetime. If product fails to work, the maximum liability of INTEGRA under this limited warranty is expressly limited to the lesser of the price you have paid for the product or the cost of repairing or replacement of any hardware components that malfunction in conditions of normal use.
- In no event will INTEGRA be liable for any damages caused by the product or the failure of the product to perform, including any lost profits or savings or special, incidental, or consequential damages. INTEGRA is not liable for any claim made by a third party to INTEGRA or to final user.
- INTEGRA is not responsible for damage that occurs as a result of your failure to follow the instructions intended for this hardware product.
- INTEGRA is not responsible for damage that occurs as a result of your failure to follow the instructions intended for this hardware product.